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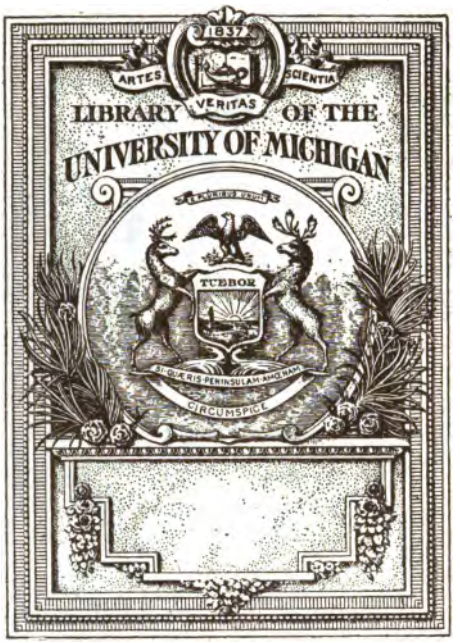
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TRANSACTIONS

OF THE

SOCIETY

INSTITUTED AT LONDON,

FOR THE

ENCOURAGEMENT

OF

ARTS, MANUFACTURES, and COMMERCE;

WITH THE

PREMIUMS offered in the YEAR 1794.

VOL. XII.

LONDON:

Printed by T. SPILSBURY and SON, Snow-hill.

To be had, by MEMBERS, of the REGISTER, at the SOCIETY'S House, in the ADELPHI; and sold by Messrs. DODSLEY, ROBSON, B. and J. WHITE, BECKET, JOHNSON, CADELL, ELMSLEY, WALTER, RICHARDSON, DEBRETT, SEWELL, and TAYLOR.

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M.DCC.XCIV.

PREFACE.

THE Reader will perceive that the arrangement of this Volume differs in ſome degree from that of the preceding ones; the liſt of Premiums offered for the enſuing Seſſion being now placed at the beginning, though hitherto it has made almoſt the laſt article of the book; and this has taken place, that the Volume may be publiſhed ſooner than has been uſual, and ſuch perſons as propoſe to become Candidates, be more early informed of the nature and conditions of the requiſites for their ſeveral claims.

It muſt afford great pleaſure to the members of the Society, as well as to every friend of the inſtitution, to perceive the flouriſhing ſtate of it; and that, under the claſs of Agri-

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culture, which is deſervedly placed the firſt, the claims made this year have been more numerous than during many years paſt, and particularly in the two great objects of encouragement, the Planting Trees, and Draining Land; for although, under the article of planting, it appears, in this volume, that the number of trees of various kinds, for which rewards have this ſeſſion been beſtowed, amounts to about four hundred and ninety-one thouſand planted, yet the whole number certified to the Society, amounts to no leſs than eight hundred and eight thouſand four hundred and thirty-three.

The ſame may be ſaid of draining land. In the following pages there appears only to have been drained thirty-eight acres, one rood, and twenty-four perches, by nine thouſand and thirty yards of drains, that being the largeſt quantity received from any one candidate, to whom therefore the premium was adjudged; but the whole number of yards of drains, for which claims were made this ſeſſion,

ſeſſion, was no leſs than ſeventeen thouſand four hundred and fifty-eight yards; and the quantity of land drained thereby, upwards of one hundred and forty-ſeven acres.

In the following pages will be found ſome judicious obſervations on the uſes and advantages of the Cheſnut Tree, tending, it may be hoped, to reſtore the culture, in this kingdom, of that excellent and uſeful tree; the wood of which, it is well known, was in high eſtimation among our foreſathers, as is evident from many of the buildings of great magnitude being conſtructed of it, and which, in many of its valuable properties, gives place to the Oak only. Other papers will alſo be found that furniſh uſeful obſervations on planting trees of different ſorts, and in various ſoils, which will throw light on that neceſſary and pleaſing branch of Agriculture.

Some further obſervations on the utility of Pruning Orchards, with hints on plant-

ing Fruit-trees, in addition to thoſe printed in the Eleventh Volume, are alſo inſerted, confirming the doctrine there laid down, and ſhewing the utility of the medicated Tar therein deſcribed. As this is a matter of great importance, the Society will at any future period be happy to receive accounts of what ſucceſs may attend the practice, from any one who may think proper to adopt the methods therein recommended.

A Paper ſhewing the advantage of the Drill Huſbandry, in the Culture of Wheat, is here inſerted: by communications on this ſubject, thus from time to time laid before the Public, the long-agitated queſtion on the comparative advantages of the Drill and broad-caſt Culture of Grain, will, it is expected, by degrees be aſcertained; and of how much conſequence that will be to the country in general, need not be mentioned.

In this Volume are alſo two Papers on the Culture and Cure of that valuable plant the

the true Rhubarb; and there is now reaſon to believe the growth of it in this country is becoming ſo conſiderable, that we ſhall in a few years be able to ſupply enough for our conſumption in medicine, and perhaps afford it at ſuch price as may enable our manufacturers to apply it to other uſes, in dying, callico-printing, &c.

On thoſe very uſeful heads, Draining and improving Land lying waſte, two Papers are inſerted in the following pages; and, as the advantages ſet forth in thoſe papers clearly prove the utility of the practice, it is not to be doubted that they will tend in a high degree to forward and eſtabliſh it.

Under the claſs of Chemiſtry in this volume is given an account, with a plate and deſcription, of a Furnace, or Boiler, called by the ingenious Inventor an Evaporator.* By

* Mr. Browne, of Derby, whoſe method of ſecuring ſeeds from the depredation of mice, and other vermin, was printed in the Eleventh Volume of theſe Tranſactions, page 143.

this contrivance, the proceſs for obtaining the ſolutions of various ſalts, as common Salt, Copperas, green, blue, and white, Sal Ammoniac, &c. in a ſtate fit for cryſtallization, will be greatly expedited; and this is cauſed by the air, which actuates the fire, being made to paſs over the ſurface of the boiling liquor, carrying with it the riſing ſteam, thereby not only accelerating the evaporation, and, in conſequence, ſhortening the work, and leſſening the conſumption of fuel and labour; but in many caſes ſecuring the operator and the neighbourhood from the effects of the diſagreeable and oftentimes noxious effluvia that ariſe during the proceſs. It is therefore juſtly preſumed, that the introduction of boilers on this conſtruction, among ſuch works as are above alluded to, will be of great benefit and advantage.

Under this head alſo is inſerted a letter from Robert Batſon, of Limehouſe, Eſq. deſcribing a method practiſed by him, for

curing the Dry-Rot in Timber; and which appeared, as far as thoſe experiments went, to have anſwered the purpoſe intended. As this ſeems to be an increaſing malady among the buildings in this country, every attempt to prevent, or cure it, is highly laudable; and, ſhould the method adviſed by Mr. Batſon, be further tried by any perſons, accounts of the ſucceſs attending them will be thankfully received. It may not be amiſs to mention that Quick Lime has been ſaid to anſwer very well, when uſed inſtead of the anchor-ſmith's aſhes recommended in Mr. Batſon's letter.

This ſeſſion Mr. George Blackman, of Hemming's-Row, having received both an honorary and pecuniary reward for diſcovering to the Society the method of preparing the Oil-Colour Cakes, invented by him, a full account of the ingredients made uſe of, and the manner of forming the Cakes, will be found in the following ſheets; and it is preſumed, from the teſtimony of ſome very

very eminent artiſts; whoſe opinions are alſo publiſhed, that they may prove a valuable acquiſition to the profeſſors of painting, and particularly to thoſe who may think proper to make uſe of oil-colours in any excurſions into the country, where it might be inconvenient to carry pigments of that kind in the ſtate they are uſually ſold.

In the claſs of Manufactures, the Society have this ſeſſion received and rewarded two ſamples of Spinning; the one, of Hemp, by a young Lady, who herſelf prepared the hemp for ſpinning; and, having ſpun a quantity of yarn from it, a piece of cloth was manufactured, of a degree of fineneſs hitherto unattempted to be made from hemp in this kingdom; and which may ſerve as a pattern for other young perſons of her ſex to imitate, and, if poſſible, excel. The other is the work of a ſervant at Kenilworth, near Coventry, who, having far excelled in the ſpinning of Flax, of a certain price, other perſons of her own condition

dition in life in her neighbourhood, it has been thought proper to reward her with a ſmall pecuniary bounty, to excite a laudable emulation among thoſe of her ſtation and condition.

Under the head of Mechanicks, the Reader will find in this Volume a deſcription and plate of a new-conſtructed Water-Bucket, for raiſing water out of deep wells, which has been ſome years in uſe at a well upwards of three hundred feet deep, the property of the inventor. The advantages of this contrivance are, that the labour of the horſes employed is diminiſhed, the buckets and rope may be made lighter, and the danger attending the work much leſſened. When theſe circumſtances are conſidered, the utility of the machine will be evident; and there can be no doubt the erecting Water-Engines on this conſtruction will take place, to the great advantage of the Public.

A plate and deſcription is alſo inſerted, in this volume, of a new-invented method of ex-

extending ſome bars which form a kind of Reel, and ſerve as the barrel of a Crane, whereby the velocity of the weight to be raiſed is adapted to the power employed in raiſing it; and, it is preſumed, the principle on which the action of this machine is founded, will be of uſe in many other caſes that have not yet been adverted to by the perſon from whom the model was received. An Eſſay alſo is inſerted in this Volume, intended to ſhew an eaſy and practicable method of forming and preſerving Standards of Weights and Meaſures deducible from each other, and which, it is preſumed, if carried into full execution, will put an effectual ſtop to all future diſputes on that ſubject.

As the ſeveral navigators to the South Sea had unanimouſly ſpoken in the higheſt terms, in commendation of the Bread-fruit produced in the iſlands of that immenſe ocean, the Society, ſo long ſince as the year 1777, offered a premium for the introduction of that fruit into the iſlands of the

the Weſt-Indies, ſubject to the Crown of Great Britain; and at length their wiſhes have been happily gratified by the perſevering attention of Captain William Bligh, aſſiſted by thoſe ingenious botaniſts, Mr. William Viles, and Mr. Chriſtopher Smith, whoſe names on this occaſion ought alſo to be recorded, and the weſtern world put in poſſeſſion of what will hereafter ſecure to that part of the globe an inexhauſtible fund of good, palatable, and wholeſome food; and it will appear, on peruſal of the following ſheets, that ſo large a quantity of the Bread-fruit trees has been introduced to the ſeveral Weſt-India Iſlands, as will aſſuredly prevent any want of the fruit hereafter in thoſe ſettlements.

The Premiums firſt offered in the year 1793, for planting Oſiers, have ſucceeded moſt happily; for, beſides the fortunate Candidates, ſeveral others produced claims; and ſuch a ſpirit of emulation has ariſen among the planters, that there is great reaſon to believe the growth of that uſeful plant

plant will be much more attended to than it has been for ſome years paſt.

Some new Premiums have this ſeſſion been offered; and it is hoped that the ingenious will exerciſe their talents in obtaining them. The continual loſs of fruit by blights, is too fatally known; and the Society have now firſt offered a reward for the diſcovery of a method to prevent that calamity.

The inconveniences that conſtantly ariſe from the freezing of water in pipes, through which it is conveyed for the ſervice of houſes, has long and juſtly been complained of, and the Society have therefore now offered a reward for diſcovering a method whereby thoſe inconveniences may be obviated; and as many fatal accidents have happened by the horſes employed in raiſing water out of deep wells, or other ſuch like works, being under the neceſſity of turning about when the bucket or load is diſcharged, it has been thought proper to offer

a Premium for the diſcovery of an eaſy method whereby ſuch danger may be avoided; and there is good reaſon to believe that, when this object is obtained, by the uſe of the Buckets deſcribed in Mr. Butler's paper; the raiſing water by Bucket-Engines will be as complete as can be wiſhed for.

It is with ſingular ſatisfaction the Society contemplate the flouriſhing ſtate of their finances, which enables them to repeat to the ingenious their invitation to ſubmit to the inſpection and encouragement of the Society any works that may have a tendency to promote the Arts, the Manufactures, and Commerce of theſe kingdoms, which will not only be ſure to meet ſome honorary or pecuniary reward, but will ſecure to the Claimants that ſelf-approbation which all ingenuous minds muſt feel at a conſciouſneſs of having contributed to the increaſe of the riches, credit, and honour, of their native country.

CONTENTS.

	Page
Preface	
Premiums offered in 1794	1
Papers in Agriculture	103
Papers in Chemiſtry	251
Paper in Polite Arts	267
Papers in Mechanicks	281
Paper in Colonies and Trade	303
Rewards beſtowed	319
Preſents received	328
Catalogue of Models and Machines	336
Liſt of Officers	339
Liſt of Members	343
Index	387

ERRATUM.

Page 135, line 8, for *Hassell* read *Hassall*.

The Reader is desired to take notice that, by an error in the press, there appears to be an omission of the pages from 161 to 194, but they are afterwards regularly continued.

PREMIUMS

OFFERED BY THE

SOCIETY

FOR THE ENCOURAGEMENT OF

ARTS, MANUFACTURES,

AND

COMMERCE,

IN

THE YEAR M.DCC.XCIV.

TO THE

PUBLIC.

ADELPHI-BUILDINGS,
April 9, 1794.

THE chief objects of the attention of the Society for the Encouragement of Arts, Manufactures, and Commerce, in the application of their Rewards, are, Ingenuity in the several branches of the POLITE and LIBERAL ARTS, useful Discoveries and Improvements in AGRICULTURE, MANUFACTURES, MECHANICKS, and CHEMISTRY, or the laying open any such to the Public; and, in general, all such useful Inventions, Discoveries, or Improvements (though not mentioned in the Book of Premiums), as may appear to have a tendency to the advantage of Trade and Commerce. The Society therefore, in pursuance of their plan, propose to bestow the following Premiums.

Premiums for Planting and Huſbandry.

Claſs 1. ACORNS. For having ſet, between the firſt of October, 1793, and the firſt of April, 1794, the greateſt quantity of ſtrong land, not leſs than ten acres, with Acorns, with or without ſeeds, cuttings, or plants of other trees, at the option of the Candidate, and for effectually fencing and preſerving the ſame, in order to raiſe timber and underwood, the GOLD MEDAL.

2. For the ſecond greateſt quantity of land, not leſs than five acres, ſet agreeably to the above conditions, the SILVER MEDAL.

CERTIFICATES of ſetting agreeably to the above conditions, and that there are not fewer than three hundred young Oaks on each acre, to be delivered to the Society on or before the firſt Tueſday in November, 1794.

3, 4. The ſame premiums are extended one year further.

CERTIFICATES to be produced on or before the firſt Tueſday in November, 1795.

5, 6.

5, 6. The ſame premiums are extended one year further.

CERTIFICATES to be produced on or before the firſt Tueſday in November 1796.

7, 8. The ſame premiums are extended one year further.

CERTIFICATES to be produced on or before the firſt Tueſday in November, 1797.

9. RAISING OAKS. To the perſon who ſhall have raiſed, ſince the year 1791, the greateſt number of Oaks, not fewer than five thouſand, either from young plants, or acorns, in order to ſecure a ſucceſſion of oak timber in this kingdom; the GOLD MEDAL.

10. For the next greateſt number, not fewer than three thouſand, the SILVER MEDAL.

CERTIFICATES that there were on the land, upon the firſt of November, 1794, at leaſt the number of young Oak-trees required, in a thriving condition, with an account of the methods purſued in making and managing the plantation, to be pro-

duced to the Society on or before the firſt Tueſday in January, 1795.

11, 12. The ſame premiums are extended one year further.

CERTIFICATES to be produced on or before the firſt Tueſday in January, 1796.

13, 14. The ſame premiums are extended one year further.

CERTIFICATES to be produced on or before the firſt Tueſday in January, 1797.

15. ASCERTAINING THE BEST METHOD OF RAISING OAKS. To the perſon who ſhall aſcertain in the beſt manner, by actual experiments, the comparative merits of the different modes of raiſing Oaks for timber, either from acorns ſet on land properly grubbed and tilled; from acorns ſown at random among buſhes, fern, or other cover; or from young plants, previouſly raiſed in nurſeries, and tranſplanted; regard being had to the expence, growth, and other reſpective advantages of the ſeveral methods; the GOLD MEDAL.

The ACCOUNTS and proper CERTIFI-

CATES to be produced to the Society on or before the firſt Tueſday in November, 1794.

16. The ſame premium is extended one year further. The ACCOUNTS and CERTIFICATES to be produced on or before the firſt Tueſday in November, 1795.

17. CHESNUTS. For having ſown or ſet, between the firſt of October, 1793, and the firſt of April, 1794, the greateſt quantity of dry loamy land, not leſs than ſix acres, with Spaniſh Cheſnuts, with or without ſeeds, cuttings, or plants of other trees adapted to ſuch ſoil, at the option of the Candidate; and for effectually fencing and preſerving the ſame, in order to raiſe timber; the GOLD MEDAL.

18. For the ſecond greateſt quantity, not leſs than four acres, the SILVER MEDAL.

CERTIFICATES of ſowing or ſetting agreeably to the above conditions, and that there are not fewer than three hundred Cheſnut plants, in a thriving ſtate, on

each acre, to be delivered to the Society on or before the firſt Tueſday in November, 1794.

19, 20. The ſame premiums are extended one year further.

CERTIFICATES to be delivered on or before the firſt Tueſday in November, 1795.

21, 22. The ſame premiums are extended one year further.

CERTIFICATES to be delivered on or before the firſt Tueſday in November, 1796.

23, 24. The ſame premiums are extended one year further.

CERTIFICATES to be delivered on or before the firſt Tueſday in November, 1797.

25. ELM. For having planted the greateſt number of the Engliſh Elm, not leſs than eight thouſand, between the twenty-fourth of June, 1792, and the twenty-fourth of June, 1793; and for the having effectually fenced and preſerved the ſame

ſame, in order to raiſe timber; the GOLD MEDAL.

26. For the ſecond greateſt number, not leſs than five thouſand, the SILVER MEDAL.

27. For the third greateſt number, not leſs than four thouſand, the SILVER MEDAL.

CERTIFICATES of the having planted agreeably to the above conditions, that the plants were in a healthy and thriving ſtate two years at leaſt after making the plantation, and ſpecifying the diſtance of the plants, to be delivered to the Society on or before the firſt Tueſday in November, 1794.

28, 29, 30. The ſame premiums are extended one year further.

CERTIFICATES to be produced on or before the firſt Tueſday in November, 1795.

31, 32, 33. The ſame premiums are extended one year further.

CERTIFICATES to be produced on or before the firſt Tueſday in November, 1796.

34, 35, 36. The ſame premiums are extended one year further.

CER-

CERTIFICATES to be produced on or before the firſt Tueſday in November, 1797.

37. LARCH. For having planted out, between the twenty-fourth of June, 1791, and the twenty-fourth of June, 1792, the greateſt number of Larch-trees, not fewer than five thouſand; and for having effectually fenced and preſerved the ſame, in order to raiſe timber; the GOLD MEDAL.

38. For the next greateſt number, not fewer than three thouſand, the SILVER MEDAL.

CERTIFICATES of the number of plants, that they were in a healthy and thriving ſtate two years at leaſt after they were planted out, with a general account of the methods uſed in making the plantation, to be delivered to the Society on or before the laſt Tueſday in December, 1794.

39, 40. The ſame premiums are extended one year further.

CERTIFICATES to be produced on or before the laſt Tueſday in December, 1795.

41,

41, 42. The ſame premiums are extended one year further.

CERTIFICATES to be produced on or before the laſt Tueſday in December, 1796.

43, 44. The ſame premiums are extended one year further.

CERTIFICATES to be produced on or before the laſt Tueſday in December, 1797.

45, 46. The ſame premiums are extended one year further.

CERTIFICATES to be produced on or before the laſt Tueſday in December, 1798.

47, 48. The ſame premiums are extended one year further.

CERTIFICATES to be produced on or before the laſt Tueſday in December, 1799.

N°. B. The Larch-trees may be either planted, mixed with other trees, or by themſelves, as may beſt ſuit the convenience of the planter.

49. SILVER FIR. For having planted out, between the twenty-fourth of June, 1790, and the twenty-fourth of June, 1791, in

in a mixed plantation of foreſt-trees, the greateſt number of Silver Firs, not fewer than two thouſand; and for having effectually fenced and preſerved the ſame, in order to raiſe timber; the GOLD MEDAL.

50. For the next greateſt number, not fewer than one thouſand, the SILVER MEDAL.

CERTIFICATES of the number of plants, that they were in a healthy and thriving ſtate two years at leaſt after they were planted out, with a general account of the methods uſed in making the plantation, to be delivered to the Society on or before the laſt Tueſday in December, 1794.

51, 52. The ſame premiums are extended one year further.

CERTIFICATES to be produced on or before the laſt Tueſday in December, 1795.

53, 54. The ſame premiums are extended one year further.

CERTIFICATES to be produced on or before the laſt Tueſday in December, 1796.

55. UPLAND OR RED WILLOW. For the greateſt number of acres, not leſs than three, planted before the end of April, 1792, with Upland or Red Willow, properly fenced and ſecured; the number of plants on each acre to be at leaſt twelve hundred; the GOLD MEDAL, or THIRTY POUNDS.

CERTIFICATES of the number of plants, and that they were in a thriving ſtate at the time of ſigning ſuch Certificates, to be produced to the Society on or before the laſt Tueſday in November, 1794.

It is well known that this ſpecies of Willow thrives well on dry ſandy land.

56. The ſame premium is extended one year further.

CERTIFICATES to be produced on or before the laſt Tueſday in November, 1795.

57. OSIERS. To the perſon who ſhall have planted, between the firſt of January and the firſt of May, 1794, the greateſt quantity of land, not leſs than three acres, with thoſe kinds of Willows, commonly known

known by the names of Oſier, Spaniard, or New-kind, fit for the purpoſe of baſket-makers, not fewer than twelve thouſand plants on each acre; TWENTY POUNDS.

58. For the ſecond greateſt quantity of land, not leſs than two acres, TEN POUNDS.

CERTIFICATES of the planting, and that the plants are in a thriving ſtate at the time of ſigning the Certificate, to be produced on or before the laſt Tueſday in November, 1794.

59, 60. The ſame premiums are extended one year further.

CERTIFICATES to be produced on or before the laſt Tueſday in November, 1795.

61. ALDER. For having planted, in the year 1791, the greateſt number of Alders, not leſs than three thouſand, on an eſtate the property of one perſon; the GOLD MEDAL.

CERTIFICATES of the number of plants, and that they were in a thriving

ving ſtate two years at leaſt after being planted, to be delivered to the Society on or before the laſt Tueſday in December, 1794.

62. The ſame premium is extended one year further.

CERTIFICATES to be delivered on or before the laſt Tueſday in December, 1795.

63. The ſame premium is extended one year further.

CERTIFICATES to be delivered on or before the laſt Tueſday in December, 1796.

64. The ſame premium is extended one year further.

CERTIFICATES to be delivered on or before the laſt Tueſday in December, 1797.

65. ASH. For having ſown or ſet, in the year 1791, the greateſt quantity of land, not leſs than ſix acres, with Aſh for timber, intermixed with ſeeds, cuttings, or plants of ſuch other trees as are adapted to the ſoil; the GOLD MEDAL.

66. For the next greateſt quantity, not leſs than four acres, the SILVER MEDAL.

CERTIFICATES of the ſowing or ſetting agreeably to the above conditions, that there are not fewer than one hundred Aſh plants on each acre, in a thriving and healthy condition, two years at leaſt after the ſowing or ſetting, with a general account of the methods uſed in making the plantation, to be delivered to the Society on or before the laſt Tueſday in December, 1794.

67, 68. The ſame premiums are extended one year further.

CERTIFICATES to be delivered on or before the laſt Tueſday in December, 1795.

69, 70. The ſame premiums are extended one year further.

CERTIFICATES to be delivered on or before the laſt Tueſday in December, 1796.

71, 72. The ſame premiums are extended one year further.

CER-

CERTIFICATES to be delivered on or before the laſt Tueſday in December, 1797.

73, 74. The ſame premiums are extended one year further.

CERTIFICATES to be delivered on or before the laſt Tueſday in December, 1798.

75. TIMBER-TREES. To the perſon who ſhall have incloſed, planted, or ſown, the greateſt number of acres, not leſs than ten, with the beſt ſorts of Foreſt-trees, for timber, between the firſt of October, 1790, and the firſt of May, 1792; the GOLD MEDAL.

An account of the methods uſed in making the plantations, and of the nature of the ſoil, together with proper Certificates that the trees were in a thriving and healthy ſtate two years at leaſt after making the plantation, to be delivered to the Society on or before the firſt Tueſday in November, 1794.

76. The ſame premium is extended one year further.

The ACCOUNTS and CERTIFICATES to be delivered to the Society on or before the firſt Tueſday in November, 1795.

77. The ſame premium is extended one year further.

The ACCOUNTS and CERTIFICATES to be delivered to the Society on or before the firſt Tueſday in November, 1796.

78. The ſame premium is extended one year further.

The ACCOUNTS and CERTIFICATES to be delivered to the Society on or before the firſt Tueſday in November, 1797.

N. B. With the above foreſt-trees, the ſeeds, cuttings, or plants, of ſuch other trees as are adapted to the ſoil, and proper for underwood, may be intermixed.

79. PLANTING BOGGY OR MORASSY SOILS. For an account of the beſt ſet of experiments ſent by the planter, or his repreſentative, to aſcertain the comparative advantages of planting boggy or moraſſy ſoils with White Poplar, Black Poplar, Lombardy Poplar, and Willow, the

the GOLD MEDAL, or THIRTY GUINEAS.

It is required that not leſs than half an acre be planted with each, and the plants to be not more than four feet aſunder.

It is alſo required that the plantation ſtand fourteen years, at the end of which to be all cut down and meaſured, or accurately meaſured ſtanding; the Certificates of the meaſure and value, and that the whole is properly fenced and ſecured, to be produced on or before the firſt Tueſday in January, 1795.

N. B. Any information relating to the ſtate of the plantation, if ſent to the Society between the time of planting, and claiming the premium, will be thankfully received.

80. The ſame premium is extended one year further.

CERTIFICATES to be produced on or before the firſt Tueſday in January, 1796.

81. MULBERRY CUTTINGS, OR TREES. For having planted the greateſt number of White or Black Mulberry Cut-

tings or Trees, not fewer than three hundred, in the year 1792, for the purpoſe of feeding Silk-worms; the GOLD MEDAL, or THIRTY POUNDS.

82. For the ſecond greateſt quantity, not fewer than one hundred and fifty, the SILVER MEDAL, or TEN POUNDS.

CERTIFICATES of ſuch planting, with the manner of culture, and that the trees were in a thriving ſtate in the month of July, 1794, to be produced to the Society on or before the firſt Tueſday in November, 1794.

*** *The Candidates for planting all kinds of Trees are to certify, that the reſpective Plantations are properly fenced and ſecured, and particularly to ſtate the condition the Plants were in at the time of ſigning ſuch Certificates.*

Any information which the Candidates for the foregoing Premiums may chooſe to communicate, relative to the methods made uſe of in forming the Plantation, or promoting the growth of the ſeveral Trees, or any other obſervations that may have occurred on the ſubject, will be thankfully received.

83. SE-

83. SECURING PLANTATIONS OF TIMBER-TREES. To the perſon who ſhall give to the Society the moſt ſatisfactory Account, founded on experience, of the moſt effectual and leaſt expenſive method of ſecuring young plantations of Timber-Trees, from Hares and Rabbits, as well as Sheep and larger cattle, which at the ſame time ſhall be leaſt ſubject to the depredations of wood-ſtealers, the SILVER MEDAL, or TWENTY POUNDS.

The ACCOUNTS and CERTIFICATES of the efficacy of the method, to be produced to the Society on or before the firſt Tueſday in November, 1794.

83.* The ſame premium is extended one year further.

The ACCOUNTS and CERTIFICATES to be produced on or before the firſt Tueſday in November, 1795.

84. TREES FOR USE WHEN EXPOSED TO THE WEATHER. To the perſon who ſhall ſend the moſt ſatisfactory account and certificate, verified by experiments, to determine which of the

following trees is of the greateſt utility for timber or poles, for uſe, when expoſed to the weather, viz.

Larch,	Aſh,
Black Poplar,	Beech,
Spaniſh Cheſnut,	Silver Fir,
Willow,	Lombardy Poplar;
Alder,	

the GOLD MEDAL.

The ACCOUNTS and CERTIFICATES to be produced on or before the ſecond Tueſday in December, 1794.

85. The ſame premium is extended one year further.

The ACCOUNTS and CERTIFICATES to be produced on or before the ſecond Tueſday in December, 1795.

86. PREVENTING THE BLIGHT ON FRUIT-TREES. To the perſon who ſhall diſcover to the Society the beſt and moſt effectual method of preventing the Blight on Fruit Trees, ſuperior to any hitherto known or practiſed, and verified by actual and comparative experiments, the GOLD MEDAL, or THIRTY GUINEAS.

The

The ACCOUNTS, with proper CERTIFICATES, to be delivered to the Society on or before the ſecond Tueſday in November, 1796.

The ſame premium is extended one year further.

The ACCOUNTS and CERTIFICATES to be delivered on or before the ſecond Tueſday in November, 1797.

N. B. It is expected that the above-mentioned comparative experiments have been made during three ſucceſſive ſeaſons; and that in the ſame aſpect and ſoil, and contiguous to them, other trees of the ſame kind with thoſe for which the claim is made, have ſuffered in conſequence of the method not having been made uſe of to them.

87. COMPARATIVE CULTURE OF WHEAT. For the beſt ſet of experiments, made on not leſs than eight acres, four of which to be ſown broad-caſt, and four drilled, to aſcertain whether it is moſt advantageous to cultivate wheat by ſowing it in the common broad-caſt way, or by drilling it in equidiſtant rows, hoeing the

intervals; the GOLD MEDAL, or the SILVER MEDAL and TWENTY GUINEAS.

It is required that an account, with proper Certificates, of the nature and condition of the land on which the experiments are made, together with an account of the produce of the Corn, be produced to the Society on or before the firſt Tueſday in February, 1795.

88. The ſame premium is extended one year further.

The ACCOUNTS, with CERTIFICATES, to be produced to the Society on or before the firſt Tueſday in February, 1796.

89. COMPARATIVE CULTURE OF WHEAT. For the beſt ſet of experiments, made on not leſs than eight acres of land, four of which to be ſown broad-caſt, and four dibbled, to aſcertain whether it is moſt advantageous to cultivate Wheat by ſowing it in the common broad-caſt way, or by dibbling it in equidiſtant rows, hoeing the intervals; the GOLD MEDAL, or the SILVER MEDAL and THIRTY GUINEAS.

It

It is required that an account, with proper Certificates, of the nature and condition of the land on which the experiments are made, together with an account of the produce of the Corn, be produced to the Society on or before the firſt Tueſday in February, 1795.

90. BEANS AND WHEAT. To the perſon who ſhall have planted or drilled, between the firſt of September, 1792, and the firſt of March, 1793, the greateſt quantity of land, not leſs than ten acres, with Beans, and ſhall have ſown the ſame land with Wheat in the ſame year, 1793; TWENTY GUINEAS.

It is required that an account of the ſort and quantity of Beans, the time of planting or drilling, and of reaping or mowing them, the produce per acre threſhed, the application of the ſtraw, the expence of planting or drilling, hand or horſe hoeing, the diſtance of the rows, and the quality of the ſoil, together with CERTIFICATES of the number of acres, and that the land was actually ſown with Wheat in the year 1793, be produce

duced on or before the firſt Tueſday in November, 1794.

N. B. The Society have been informed, that Beans may be drilled or planted ſo early as the month of December, from whence may be derived the advantage of an early harveſt; in which caſe the ſtraw will be far more valuable than that from a later planting or drilling.

91. The ſame premium is extended one year further.

The ACCOUNTS to be produced on or before the firſt Tueſday in November, 1795.

92. The ſame premium is extended one year further.

The ACCOUNTS to be produced on or before the firſt Tueſday in November, 1796.

93. DRILL HUSBANDRY. To the perſon who, in the year 1794, ſhall have cultivated the greateſt quantity of land, not leſs than four hundred acres, under the Drill ſyſtem, the wheat ſown in the autumn of

of the year 1793 included, the GOLD MEDAL.

An Account of the quality of the ſoil, the various crops, and of the times of drilling and hoeing, with CERTIFICATES of the quantity of land, and the general appearance of the crop, to be delivered on or before the third Tueſday in February, 1795.

94. The ſame premium is extended one year further.

The ACCOUNTS and CERTIFICATES to be delivered on or before the third Tueſday in February, 1796.

95. TURNEPS. For the beſt account of experiments made on at leaſt ſix acres of land, to determine the comparative advantage of the drill or broad-caſt method in the cultivation of Turneps; the GOLD MEDAL, or the SILVER MEDAL and TEN GUINEAS.

The ACCOUNTS, with proper CERTIFICATES, to be delivered on or before the third Tueſday in April, 1795.

It is required that one half of the land be

be drilled, and the other half ſown broad-caſt.

96. The ſame premium is extended one year further.

The ACCOUNTS to be delivered on or before the third Tueſday in April, 1796.

97. VEGETABLE FOOD. For the beſt account, confirmed by experiments, of the Vegetable Food (Cabbages and Turneps excepted), growing in the months of March and April, that will moſt increaſe the milk in Mares, Cows, and Ewes, at that ſeaſon; provided ſuch food can be cultivated at an expence that will admit of its being applied to the above purpoſes; the GOLD MEDAL, or the SILVER MEDAL and TEN GUINEAS.

CERTIFICATES to be produced on or before the ſecond Tueſday in November, 1794.

98. The ſame premium is extended one year further.

CERTIFICATES to be produced on or before the ſecond Tueſday in November, 1795.

99.

99. COMPARATIVE CULTURE OF THE TURNEP-ROOTED CABBAGE. To the perſon who ſhall produce to the Society the beſt account of the moſt ſatisfactory experiments, made on at leaſt four acres of land, to aſcertain the comparative advantages of the culture of the Turnep-rooted Cabbage, by ſowing it broad-caſt, or in drills, and hoeing out the plants, as is practiſed with the common Turnep, or by ſowing the ſeed in nurſeries, and tranſplanting the plants at proper diſtances, hoeing the intervals; the SILVER MEDAL and TEN POUNDS.

It is required that at leaſt two acres be cultivated in each manner, and CERTIFICATES of the culture, with an account of the ſoil, expence, and produce of each ſeparately, be produced on or before the firſt Tueſday in October, 1794.

100. TURNEP-ROOTED CABBAGE. For having raiſed, and duly cultivated, Turnep-rooted Cabbage, in the year 1793, for the

the feeding Cattle or Sheep, on the greateſt number of acres, not leſs than ten, and giving an account of the ſoil, culture, time, and manner of feeding off, produce, and the effects on Cattle or Sheep fed with it; the GOLD MEDAL.

101. For the next greateſt number of acres, not leſs than five, the SILVER MEDAL and TEN GUINEAS.

CERTIFICATES of the quantity of land, with the accounts, to be produced on or before the laſt Tueſday in October, 1794.

102, 103. The ſame premiums are extended one year further.

CERTIFICATES to be produced on or before the laſt Tueſday in October, 1795.

104. POTATOES FOR FEEDING CATTLE AND SHEEP. To the perſon who, in the year 1793, ſhall have cultivated the greateſt quantity of land, not leſs than four acres, with Potatoes, for the ſole purpoſe of feeding Cattle and Sheep, the GOLD MEDAL, or THIRTY GUINEAS.

CER-

CERTIFICATES, with ſatisfactory Accounts of the expence and manner of cultivating the Potatoes, and the application of them to the above purpoſes, and the ſucceſs that has attended the uſe of them, to be delivered to the Society on or before the ſecond Tueſday in November, 1794.

105. The ſame premium is extended one year further.

CERTIFICATES to be delivered on or before the ſecond Tueſday in November, 1795.

106. The ſame premium is extended one year further.

CERTIFICATES to be delivered on or before the ſecond Tueſday in November, 1796.

N. B. Should any Gentleman have already cultivated Potatoes for the purpoſes mentioned in the above advertiſement, any information from him on the ſubject will be thankfully received by the Society.

107. CULTIVATING ROOTS AND HERBAGE FOR FEEDING SHEEP AND

AND BLACK CATTLE. For the moſt ſatisfactory experiments, made between Michaelmas, 1793, and the firſt of May, 1794, in order to aſcertain which of the following plants can be cultivated and houſed, or otherwiſe ſecured for winter fodder, to the greateſt advantage, viz.

Turnep-rooted Cabbage,	Carrots,
Turnep Cabbage,	Parſneps,
Turneps,	Potatoes;

the GOLD MEDAL.

The ACCOUNTS, with proper Certificates, to be produced on or before the firſt Tueſday in November, 1794.

It is required that the above roots be taken off the land by the laſt day of October, 1793; that a crop of Wheat may be ſown in the ſame ground, and the particulars of the ſowing and planting, taking up, produce, preſerving, and application to the feeding Sheep and Black Cattle, be ſpecified. The comparative experiments muſt be made between two or more of any of the above-mentioned plants, and not leſs than one

one acre be cultivated with each particular kind of plant.

N. B. Great advantage will ariſe to the Farmer occupying land in the neighbourhood of extenſive commons, from the conveniency of keeping large flocks of Sheep, and herds of Cattle, if the difficulty of ſupporting them through the winter was obviated by a due knowledge of this practice.

108. The ſame premium is extended one year further.

CERTIFICATES to be produced on or before the firſt Tueſday in November, 1795.

109. STALL-FEEDING HORSES WITH GREEN VEGETABLES. To the perſon who ſhall keep the greateſt number of Horſes, not fewer than four, in the Stall or Stable, during the greateſt number of months in the year, on Carrots, Potatoes, Lucern, Saintfoin, Clover, Vetches, or any other green vegetable food raiſed on land in his own poſſeſſion; the SILVER MEDAL and TEN GUINEAS.

It is required that the number of horſes ſo fed, the quantity of land employed in raiſing the green vegetable food, the quantity of hay and corn (if any) conſumed, the ſtate and condition of the horſes, an account of the work done by them, and of the quantity of dung obtained, as near as can be aſcertained, be fully and particularly ſpecified.

The ACCOUNTS and CERTIFICATES to be produced to the Society on or before the ſecond Tueſday in February, 1795.

110. MAKING HAY IN WET WEATHER. To the perſon who ſhall diſcover to the Society the beſt and cheapeſt method, ſuperior to any hitherto practiſed, of making Hay in wet weather, the GOLD MEDAL, or THIRTY GUINEAS.

A full Account of the method employed, and of the expence attending the proceſs, with not leſs than fifty-ſix pounds of the hay; and Certificates that at leaſt the produce of fifteen acres of land has been made according to the method deſcribed, and that the

the whole is of equal quality with the ſamples; to be produced to the Society on or before the firſt Tueſday in January, 1795.

111. The ſame premium is extended one year further.

The SAMPLES and CERTIFICATES to be produced on or before the firſt Tueſday in January, 1796.

112. The ſame premium is extended one year further.

The SAMPLES and CERTIFICATES to be produced on before the firſt Tueſday in January 1797.

113. CULTIVATING THE TRUE RHUBARB. For having raiſed, before the end of the year 1794, the greateſt number of plants, not leſs than three hundred, of Rheum Palmatum, or true Rhubarb, the GOLD MEDAL.

114. For the next greateſt number, not leſs than two hundred plants, the SILVER MEDAL.

CERTIFICATES of the number of plants, that they ſtand at leaſt four feet aſunder,

that they have been in a thriving ſtate during the preceding ſummer, with an account of the ſoil, culture, and aſpect, to be produced on or before the ſecond Tueſday in February, 1795.

115, 116. The ſame premiums are extended one year further: the number of plants, in the firſt claſs, to be not leſs than ſix hundred; and, in the ſecond claſs, not leſs than four hundred.

CERTIFICATES to be produced on or before the ſecond Tueſday in February, 1796.

117. RHUBARB, For the greateſt quantity of Rhubarb, of Britiſh growth, not leſs than twenty pounds weight, equal to ſuch as is commonly ſold in the ſhops under the name of Turkey or Ruſſia Rhubarb; five pounds of which, as a ſample, with CERTIFICATES that the remainder is of equal goodneſs, and a particular Account of the manner of culture and cure, to be produced on or before the firſt Tueſday

Tueſday in November, 1794; the GOLD MEDAL.

118. For the next greateſt quantity, not leſs than ten pounds weight, the SILVER MEDAL.

119, 120. The ſame premiums are extended one year further.

The SAMPLES and CERTIFICATES to be produced on or before the firſt Tueſday in November 1795.

121. ASCERTAINING THE COMPONENT PARTS OF ARABLE LAND. To the perſon who ſhall produce to the Society the moſt ſatisfactory ſet of experiments, to aſcertain the due proportion of the ſeveral component parts of Arable Land, in one or more counties in Great Britain, by an accurate analyſis of it; and who, having made a like analyſis of ſome poor land, ſhall, by comparing the component parts of each, and thereby aſcertaining the deficiencies in the poor ſoil, improve a quantity of it, not leſs than one acre, by the addition of ſuch parts as the former ex-

periments ſhall have diſcovered to be wanting therein, and therefore probably the cauſe of its ſterility; the GOLD MEDAL, or FIFTY GUINEAS.

It is required that the manurings, ploughings, and crops of the improved land, be the ſame after the improvement as before; and that a minute account of the produce in each ſtate, of the weather, and of the various influencing circumſtances, together with the method made uſe of in analyſing the ſoils, be produced, with proper CERTIFICATES, and the chemical reſults of the analyſis, which are to remain the property of the Society, on or before the laſt Tueſday in November, 1794.

It is expected that a quantity, not leſs than ſix pounds, of the rich, of the poor, and of the improved ſoils, be produced with the Certificates.

N. B. Among the methods or proceſſes made uſe of by Chemiſts, and called DRY or MOIST, the latter only appears adapted to the aſcertaining the reſpective proportions

tions of the component parts of Arable earth.—Dr. Shaw, in his Chemical Lectures; Dr. Home, in his Principles of Agriculture; Dr. George Fordyce, in his Elements of Agriculture; and Sir Torbern Bergmen, in his "Diſſertation ſur les Terres Géoponiques;" have treated of theſe ſubjects.

122. The ſame premium is extended one year further.

The ACCOUNTS to be produced on or before the laſt Tueſday in November, 1795.

123. The ſame premium is extended one year further.

The ACCOUNTS to be produced on or before the laſt Tueſday in November, 1796.

124. The ſame premium is extended one year further.

The ACCOUNTS to be produced on or before the laſt Tueſday in November, 1797.

125. The ſame premium is extended one year further.

The ACCOUNTS to be produced on or before the laſt Tueſday in November, 1798.

126. DRAINING LAND. To the perſon who, in the year 1794, ſhall have made the greateſt number of yards, not fewer than one thouſand, of Hollow Drain, of brick, ſtone, or ſuch like durable materials, with a clear paſſage for the water, of not leſs than ſix inches wide, for the improvement of land injured by water ariſing from internal ſprings; the GOLD MEDAL, or THIRTY GUINEAS.

Particular accounts of the nature, quality, ſpontaneous produce, and yearly value of the Land before draining, and the ſuppoſed value afterwards; the nature and texture of the under-ſtrata whence the ſprings ariſe; the depth and width of the drains; the quantity of ſuppoſed water diſcharged, the expence of labour and materials per yard, in length, when finiſhed; a ſketch or plan of all the drains, and their ſeveral inclinations and diſtances from each other;

other; with CERTIFICATES of the number of acres drained, and that the land was actually wet and ſpringy before draining, but dry and firm afterwards; to be produced to the Society on or before the third Tueſday in February, 1795.

127. The ſame premium is extended one year further.

The ACCOUNTS and CERTIFICATES to be produced on or before the third Tueſday in February, 1796.

128. IMPROVING LAND LYING WASTE. For the beſt Account of a method of improving any of the following ſoils, being land lying waſte or uncultivated, viz. Clay, Gravel, Sand, Chalk, Moor or Peat-earth, and Bog; verified by experiments on not leſs than fifty acres of land; the GOLD MEDAL, or the SILVER MEDAL and TWENTY GUINEAS for each.

129. For the next greateſt quantity of land, not leſs than twenty-five acres, the SILVER MEDAL and TEN GUINEAS.

To be produced, with proper CERTI-

FICATES, on or before the ſecond Tueſday in December, 1794.

The ſoil, manner of improvement, expence, and product, are required to be fully explained.

130, 131. The ſame premiums are extended one year further.

The ACCOUNTS to be produced on or before the ſecond Tueſday in December, 1795.

132, 133. The ſame premiums are extended one year further.

The ACCOUNTS to be produced on or before the ſecond Tueſday in December, 1796.

134. MANURES. For the moſt ſatisfactory ſet of experiments, to aſcertain the comparative advantages of the following Manures, uſed as Top-dreſſings, on Graſs or Corn Land, viz. Soot, Coal-Aſhes, Wood-Aſhes, Lime, Gypſum, Night-ſoil; the GOLD MEDAL, or the SILVER MEDAL and TWENTY GUINEAS.

It is required that the above experiments be

be made between two or more of the above-mentioned Manures, and that not leſs than two acres of land be dreſſed with each Manure. An account of the nature of the ſoil, quantity and expence of the Manure, and crops, with CERTIFICATES, to be produced on or before the laſt Tueſday in February, 1795.

135. The ſame premium is extended one year further.

The ACCOUNTS and CERTIFICATES to be produced on or before the laſt Tueſday in February, 1796.

136. IMPROVING WASTE MOORS. For the improvement of the greateſt number of acres of Waſte Moor-Land, not leſs than one hundred, the GOLD MEDAL.

It is required that the land before improvement be abſolutely uncultivated, and in a great meaſure uſeleſs; that in its improved ſtate it be incloſed, cultivated, and divided into fields, ſufficient for the uſe and occupation of a tenant.

CER-

CERTIFICATES of the number of acres, of the quality of the Moor ſo improved, of the mode and expence of the improvement, the ſtate it is in as to the proportion of graſs to arable, and the average value thereof, to be produced on or before the firſt Tueſday in February, 1795.

137. The ſame premium is extended one year further.

CERTIFICATES to be produced on or before the firſt Tueſday in February, 1796.

138. The ſame premium is extended one year further.

CERTIFICATES to be produced on or before the firſt Tueſday in February, 1797.

139. The ſame premium is extended one year further.

CERTIFICATES to be produced on or before the firſt Tueſday in February, 1798.

140. GAINING LAND FROM THE SEA. To the perſon who ſhall produce to the Society an account of the beſt method, verified

verified by actual experiment, of gaining Land from the Sea, not leſs than twenty acres, on the coaſt of England, or Wales, the GOLD MEDAL.

CERTIFICATES of the quantity of Land, and that the experiments were begun after the firſt of January, 1789, to be produced to the Society on or before the firſt Tueſday in October, 1794.

N. B. The Society have been credibly informed, that land has been gained on the coaſt of Holland, by fixing rows of whiſps of ſtraw upright in the ſand, at about a foot diſtant from each other, or by fixing ſtakes at proper diſtances from each other, and wattling ſtraw-bands between them.

141. The ſame premium is extended one year further.

CERTIFICATES to be produced on or before the firſt Tueſday in October, 1795.

142. The ſame premium is extended one year further.

CERTIFICATES to be produced on or before the firſt Tueſday in October, 1796.

143. The

143. The ſame premium is extended one year further.

CERTIFICATES to be produced on or before the firſt Tueſday in October, 1797.

144. MACHINE TO ANSWER THE PURPOSE OF REAPING OR MOWING CORN. For inventing a Machine to anſwer the purpoſe of mowing or reaping Wheat, Rye, Barley, Oats, or Beans, by which it may be done more expeditiouſly and cheaper than by any method now practiſed, provided it does not ſhed the Corn or Pulſe more than the methods in common practice, and that it lays the ſtraw in ſuch a manner as that it may be eaſily gathered up for binding; TEN GUINEAS.

The MACHINE, with CERTIFICATES that at leaſt three acres have been cut by it, to be produced to the Society on or before the ſecond Tueſday in December, 1794.

Simplicity and cheapneſs in the conſtruction will be conſidered as principal parts of its merit.

145. IM-

145. IMPROVED HOE. To the perſon who ſhall produce to the Society the moſt improved or beſt-conſtructed Horſe or Hand Hoe, ſuperior to any hitherto in uſe, for the purpoſe of clearing from weeds, and looſening the Soil in the intermediate ſpaces of all Crops of Corn ſown in equi-diſtant rows, and which ſhall earth up the young plants at the ſame time; the GOLD MEDAL, or TWENTY GUINEAS.

A HOE, with CERTIFICATES of its having been ſucceſsfully uſed, to be produced to the Society on or before the firſt Tueſday in December, 1794.

146. The ſame premium is extended one year further.

The HOE, with CERTIFICATES, to be produced on or before the firſt Tueſday in December, 1795.

147. DESTROYING THE GRUB OF THE COCKCHAFER. To the perſon who ſhall diſcover to the Society an effectual method, verified by repeated and ſatisfactory trials, of deſtroying the Grub

of

of the Cockchafer, or of preventing or checking the deſtructive effects which always attend Corn, Peas, Beans, and Turneps, when attacked by thoſe inſects; the GOLD MEDAL, or THIRTY GUINEAS.

The ACCOUNTS, with proper CERTIFICATES, to be produced on or before the firſt Tueſday in January, 1795.

148. DESTROYING THE WIRE-WORM. To the perſon who ſhall diſcover to the Society an effectual method, verified by repeated and ſatisfactory trials, of deſtroying the inſect called the Wire-worm, or of preventing or checking the deſtructive effects which always attend Corn, Beans, Peas, or Pulſe, when attacked by thoſe inſects; the GOLD MEDAL, or THIRTY GUINEAS.

The ACCOUNTS, with proper CERTIFICATES, to be produced to the Society on or before the firſt Tueſday in January, 1795.

149. DESTROYING THE FLY ON HOPS, AND CATERPILLARS ON FRUIT-TREES AND CULINARY PLANTS.

PLANTS. To the perſon who ſhall diſcover to the Society an eaſy and efficacious method of deſtroying the Fly on Hops, and Caterpillars on Fruit-trees and culinary Plants, ſuperior to any hitherto known or practiſed, the GOLD MEDAL or THIRTY POUNDS.

ACCOUNTS, and CERTIFICATES that the method has been effectually practiſed on not leſs than ſix acres of Hop-Ground, or an Orchard or Garden of not leſs than two acres, to be delivered to the Society on or before the firſt Tueſday in February, 1795.

150. CURE OF THE ROT IN SHEEP. To the perſon who ſhall diſcover to the Society the beſt and moſt effectual method of curing the diſeaſe called the Rot in Sheep, verified by repeated and ſatisfactory experiments, the GOLD MEDAL, or THIRTY POUNDS.

It is expected that the candidates furniſh accurate accounts of the nature, ſymptoms, and cure of the diſeaſe, together with the imputed cauſe thereof, and the actual or

probable means of prevention, which, with proper CERTIFICATES, muſt be delivered to the Society on or before the firſt Tueſday in February, 1795.

151. PREVENTING AND CURING THE ILL EFFECTS OF THE FLY ON SHEEP. To the perſon who ſhall diſcover to the Society the moſt effectual method of preventing and curing the ill effects of the Fly on Sheep, the SILVER MEDAL, or THIRTY GUINEAS.

It is required that the method be aſcertained by repeated experiments, and that a CERTIFICATE of its efficacy be delivered to the Society on or before the firſt Tueſday in December, 1794.

152. The ſame premium is extended one year further.

The ACCOUNTS and CERTIFICATES to be delivered to the Society on or before the firſt Tueſday in December, 1795.

Premiums

Premiums for Diſcoveries and Improvements in Chemiſtry, Dying, and Mineralogy.

153. BARILLA. For the greateſt quantity of Merchantable Barilla, not leſs than half a ton, made from Spaniſh Kali, or any other plant raiſed in Great Britain, the GOLD MEDAL, or THIRTY GUINEAS.

A ſample of not leſs than twenty-eight pounds, with a CERTIFICATE that half a ton has been made, to be produced on or before the firſt Tueſday in January, 1795.

154. PRESERVING SEEDS OF VEGETABLES. For the beſt method of preſerving the Seeds of Plants in a ſtate fit for vegetation a longer time than has hitherto been practiſed, ſuch method being ſuperior to any known to the public, and verified by ſufficient trial; to be communicated to the Society on or before the firſt Tueſday in December, 1794; the GOLD MEDAL, or THIRTY GUINEAS.

155. The ſame premium is extended one year further; the ACCOUNTS to be produced on or before the firſt Tueſday in December, 1795.

156. METHOD OF SEPARATING THE SACCHARINE SUBSTANCE OF TREACLE IN A SOLID FORM. To the perſon who ſhall diſcover to the Society the beſt method of ſeparating the Saccharine Subſtance of Treacle in a ſolid form, at ſuch an expence as will render it advantageous to the public, the GOLD MEDAL, or FIFTY POUNDS.

A quantity of the Saccharine Subſtance, ſo ſeparated, in a ſolid form, not leſs than thirty pounds weight, with an account of the proceſs, and CERTIFICATES that not leſs than one hundred weight has been prepared, to be produced to the Society on or fore the firſt Tueſday in February, 1795.

157. The ſame premium is extended one year further.

SAMPLES and CERTIFICATES to be produced to the Society on or before the firſt Tueſday in February, 1796.

158. PRE-

158. PRESERVING FRESH-WATER SWEET. To the perſon who ſhall produce to the Society the beſt account, verified by ſatisfactory trials, of an efficacious method of preſerving Freſh-Water ſweet during long voyages, the GOLD MEDAL, or FIFTY POUNDS.

ACCOUNTS, and full deſcriptions of the methods made uſe of, in order that it may be known that nothing injurious enters therein, to be produced to the Society, with at leaſt thirty gallons of Water ſo preſerved, and proper CERTIFICATES, on or before the laſt Tueſday in December, 1794.

159. The ſame premium is extended one year further.

The ACCOUNTS and CERTIFICATES to be produced on or before the laſt Tueſday in December, 1795.

160. DESTROYING SMOKE. For the beſt account, aſcertained by proper experiments, of a method of deſtroying or burning the Smoke of fires belonging to

Steam-Engines, Furnaces, employed in calcining or ſmelting Metals, or other large works, in order to prevent annoyance to the neighbourhood; to be produced on or before the firſt Tueſday in January, 1795; the GOLD MEDAL, or THIRTY POUNDS.

161. The ſame premium is extended one year further.

The ACCOUNTS to be produced on or before the firſt Tueſday in January, 1796.

162. CONDENSING SMOKE. To the perſon who ſhall invent the beſt method by which the Smoke of Steam-Engines, Brew-houſes, Sugar-houſes, or Furnaces, may be advantageouſly condenſed and collected in the form of Tar, or ſome other uſeful material; the GOLD MEDAL, or FIFTY GUINEAS.

The ACCOUNTS with proper CERTIFICATES of the method having been ſucceſsfully employed, and ſpecimens of the materials produced, to be delivered to the Society on or before the firſt Tueſday in December, 1794.

163. The ſame premium is extended one year further.

The ACCOUNTS and CERTIFICATES to be produced on or before the firſt Tueſday in December, 1795.

164. CANDLES FROM RESIN. To the perſon who ſhall diſcover to the Society the beſt method of ſo reducing the inflammable quality of Reſin, as to adapt it to the purpoſes of making Candles fit for common uſe, at a price much inferior to that of Candles made of Tallow only; the GOLD MEDAL, or THIRTY GUINEAS.

Six pounds at leaſt of the Candles ſo prepared, with an ACCOUNT of the proceſs, to be delivered to the Society on or before the firſt Tueſday in December, 1794.

165. REFINING WHALE OR SEAL OIL. For diſcloſing to the Society an effectual method of purifying Whale or Seal oil from the glutinous matter that encruſts the wicks of lamps, and extinguiſhes

the light, though fully ſupplied with oil; the GOLD MEDAL, or FIFTY GUINEAS.

It is required that the whole of the proceſs be fully and fairly diſcloſed, in order that ſatisfactory experiments may be made by the Society, to determine the validity of the claim; and that CERTIFICATES that not leſs than twenty gallons have been purified according to the proceſs delivered in, muſt, together with two gallons of the oil in its unpurified ſtate, and two gallons ſo refined, be produced to the Society on or before the ſecond Tueſday in February, 1795.

166. The ſame premium is extended one one year further.

CERTIFICATES and SAMPLES to be produced on or before the ſecond Tueſday in February, 1796.

167. CLEARING FEATHERS FROM THEIR ANIMAL OIL. To the perſon who ſhall diſcover to the Society the beſt and moſt expeditious method, ſuperior to any hitherto practiſed, of clearing

ing feathers from their offenſive animal oil, for the uſe of upholders in making beds, cuſhions, &c. FORTY GUINEAS.

A quantity of Feathers ſo cleared, not leſs than twenty pounds weight, with a full account of the proceſs, to be produced to the Society, on or before the firſt Tueſday in February, 1795.

168. SUBSTITUTE FOR, OR PREPARATION OF YEAST. For diſcovering to the Society an effectual Subſtitute for Yeaſt, or preparation of Yeaſt, which, after being kept ſix months, ſhall be fit for fermenting liquors, and raiſing bread; the GOLD MEDAL, or THIRTY POUNDS.

Specimens of the Subſtitute, or of the Preparation of Yeaſt, ſufficient for trials, together with a paper ſealed up, and containing an account of the compoſition of the Subſtitute, or method of preparing the Yeaſt, to be produced on or before the laſt Tueſday in November, 1794.

169. SE-

169. SECURING EMPTY CASKS FROM BECOMING MUSTY OR STINKING, OR CURING THOSE THAT ARE SO. To the perſon who ſhall diſcover to the Society the beſt, cheapeſt, and moſt efficacious method, ſuperior to any hitherto known, of ſecuring empty Caſks from becoming muſty or ſtinking, or curing thoſe that are become ſo; the GOLD MEDAL, or THIRTY POUNDS.

A full deſcription of the method, with proper CERTIFICATES that it has been efficaciouſly practiſed, to be delivered to the Society on or before the firſt Tueſday in February, 1795.

170. PRESERVING SALTED PROVISIONS FROM BECOMING RANCID OR RUSTY. To the perſon who ſhall diſcover to the Society the beſt, cheapeſt, and moſt efficacious method of preſerving Salted Proviſions from growing rancid or ruſty; the GOLD MEDAL, or THIRTY POUNDS.

A full

A full deſcription of the method, with proper CERTIFICATES that it has been found, on repeated trials, to anſwer the purpoſe intended, to be produced to the Society on or before the firſt Tueſday in February, 1795.

170*. The ſame premium is extended one year further.

The ACCOUNT and CERTIFICATES to be produced to the Society on or before the firſt Tueſday in February, 1796.

171. INCREASING STEAM. To the perſon who ſhall diſcover to the Society a method, verified by actual experiments, of increaſing the quantity or the force of Steam, in Steam-Engines, with leſs fuel than is uſually employed, provided that in general the whole amount of the expences in uſing Steam-Engines may be conſiderably leſſened; the GOLD MEDAL, or THIRTY GUINEAS.

To be communicated to the Society on or before the firſt Tueſday in January, 1795.

N. B. A

N. B. As it is well known there are methods of preventing the ebullition of liquids by the addition of particular matters in the boiling, it is ſubmitted to the conſideration of the ingenious, whether, by the addition of ſome matters, or by ſome mechanical operations, the boiling and evaporation may not be increaſed.

172. The ſame premium is extended one year further.

To be communicated to the Society on or before the firſt Tueſday in January, 1796.

173. PREVENTING THE DRY-ROT IN TIMBER. To the perſon who ſhall diſcover to the Society the cauſe of the Dry-Rot in Timber, and diſcloſe a certain method of prevention, ſuperior to any hitherto known, the GOLD MEDAL, or THIRTY GUINEAS.

The ACCOUNTS of the cauſe, and method of prevention, confirmed by repeated experiments, to be produced to the Society on or before the ſecond Tueſday in December, 1794.

174.

174. The ſame premium is extended one year further.

The ACCOUNTS to be produced on or before the ſecond Tueſday in December, 1795.

175. FINE BAR-IRON. To the perſon, in England or Wales, who ſhall make the greateſt quantity of Bar-Iron, not leſs than ten tons, with Coak, from Coak Pigs, equal in quality to the beſt Iron imported from Sweden or Ruſſia, and as fit for converting into Steel; the GOLD MEDAL.

SAMPLES, not leſs than one hundred weight, with CERTIFICATES that the whole quantity is of equal quality, to be produced to the Society on or before the firſt Tueſday in January, 1795.

176. The ſame premium is extended one year further.

SAMPLES and CERTIFICATES to be delivered on or before the firſt Tueſday in January, 1796.

177. METHOD OF PREPARING WHITE LEAD, WHICH SHALL NOT

NOT BE PREJUDICIAL. To the perſon who ſhall diſcover to the Society a method of preparing White Lead, in a manner that ſhall not be prejudicial to the health of the workmen employed either in making or uſing it, and will anſwer all the purpoſes for which White Lead is at preſent uſed; FIFTY POUNDS.

A quantity of the White Lead ſo prepared, with an account of the proceſs made uſe of, and CERTIFICATES that not leſs than one ton has been manufactured in the ſame manner, to be produced to the Society on or before the ſecond Tueſday in February, 1795.

178. SUBSTITUTE FOR THE BASIS OF PAINT. To the perſon who ſhall produce to the Society the beſt Subſtitute, ſuperior to any hitherto known, for the Baſis of Paint, equally proper for the purpoſe as the White Lead now employed; ſuch ſubſtitute not to be of a noxious quality, and which may be afforded at a price not materially higher than that of White Lead;

Lead; the GOLD MEDAL, or THIRTY POUNDS.

A quantity of the Subſtitute, not leſs than fifty pounds weight, with an ACCOUNT of the proceſs uſed in preparing it, and CERTIFICATES that at leaſt five hundred weight has been manufactured, to be produced to the Society on or before the ſecond Tueſday in November, 1794.

179. The ſame premium is extended one year further.

CERTIFICATES and ACCOUNTS to be produced on or before the ſecond Tueſday in November, 1795.

180. REFINING BLOCK TIN. To the perſon who ſhall diſcover to the Society the beſt method of purifying or refining *Block Tin*, in ſuch manner as to render it fit for the finer purpoſes to which *Grain Tin* is now ſolely applied, and at an expence that ſhall not render it higher in price than *Grain Tin*; the GOLD MEDAL, or FIFTY POUNDS.

CERTIFICATES that not leſs than three tons have been refined or purified, with a full

full detail of the proceſs, and a quantity, not leſs than one hundred weight, of the Tin ſo refined, to be produced to the Society on or before the firſt Tueſday in November, 1794.

181. The ſame premium is extended one year further.

CERTIFICATES to be produced on or before the firſt Tueſday in November, 1795.

182. GLAZING EARTHEN WARE WITHOUT LEAD. To the perſon who ſhall diſcover to the Society the cheapeſt, ſafeſt, moſt durable, and moſt eaſily fuſible Compoſition, fit for the purpoſe of glazing the ordinary kinds of Earthen Ware, without any preparation of Lead, and preferable to any hitherto in uſe; the GOLD MEDAL, or THIRTY POUNDS.

SPECIMENS of the Ware ſo glazed, with proper CERTIFICATES of its having ſucceeded, with a SAMPLE of the materials made uſe of, to be produced to the Society on or before the firſt Tueſday in February, 1795.

Premiums

Premiums for promoting the Polite Arts.

183. HONORARY PREMIUMS FOR DRAWINGS. For the beſt Drawing of any kind, made with Crayons, Chalk, Black Lead, Pen, Indian Ink, or Biſter, by young Gentlemen under the age of twenty-one, ſons or grandſons of Peers, or Peereſſes in their own right, of Great Britain or Ireland, to be produced on or before the firſt Tueſday in March, 1795; the HONORARY MEDAL of the Society IN GOLD.

184. The ſame IN SILVER, for the ſecond in merit.

185, 186. The ſame premiums will be given, on the like conditions, to young Ladies, daughters or grand-daughters of Peers, or Peereſſes in their own right, of Great-Britain or Ireland.

187. HONORARY PREMIUMS FOR DRAWINGS. For the beſt Drawing of any kind, made with Crayons, Chalk, Black Lead, Pen, Indian Ink, or Biſter, by young Gentlemen under the age of twenty-one; to be produced on or before the firſt Tueſday in March, 1795; the GOLD MEDAL.

188. For the next in merit, the SILVER MEDAL.

189, 190. The ſame premiums will be given for Drawings by young Ladies.

N. B. As the foregoing Honorary Premiums are intended only for ſuch of the Nobility and Gentry as may hereafter become patrons or patroneſſes of the Arts; perſons profeſſing any branch of the Polite Arts, or any buſineſs dependent on the Arts of Deſign, or the ſons or daughters of ſuch perſons, will not be admitted Candidates in theſe Claſſes.

The two following Premiums (Claſſes 191 *and* 192*) are offered in conformity to the Will of the late John Stock, of Hampſtead, Eſq.*

191. DRAWING. For the beſt Drawing, in Indian Ink, of the Statue of Narciſſus, by Mr. Bacon, in the Society's Great Room, not leſs than eighteen inches high, to be produced on or before the third Tueſday in February, 1795, a SILVER MEDALLION, with the following engraved inſcription: *The Premium given by the Society for the Encouragement of Arts, Manufactures, and Commerce, in conformity to the Will of John Stock, of Hampſtead, Eſq. the Drawing to be left with the Society as their property.*

192. PORTRAIT. For the beſt Copy, in Oil-Colours, of a Portrait of the late JOHN STOCK, of Hampſtead, Eſq. to be

produced on or before the third Tueſday in February, 1795, a SILVER MEDALLION, with the following engraved inſcription: *The Premium given by the Society for the Encouragement of Arts, Manufactures, and Commerce, in conformity to the Will of John Stock, of Hampſtead, Eſq.*

193. DRAWINGS OF OUTLINES. For the beſt Outline, after an original group or caſt, in plaſter, of Human Figures, by perſons of either ſex, under the age of ſixteen, the principal figure not leſs than twelve inches; to be produced on or before the third Tueſday in February, 1795; the greater SILVER PALLET.

194. For the next in merit, the leſſer SILVER PALLET.

N. B. Theſe drawings are to be made on Paper, with Chalk, Black Lead, Indian Ink, or Biſter; and the original either to be produced to the Society, or to be referred to for their examination.

195. DRAWINGS OF MACHINES. For the beſt Perſpective Drawing, by per-

ſons of either ſex under the age of twenty-one years, of the Spinning and Winding Machine, by Mr. Burt, in the Society's Repoſitory, the greater SILVER PALLET; to be produced on or before the third Tueſday in February, 1795.

N. B. Such Candidates as propoſe to make Drawings for this Premium, will be admitted by the Regiſter any day (Sundays and Wedneſdays excepted), between the hours of ten and two.

The Drawing to which the premium is adjudged, is to remain the property of the Society.

196. DRAWINGS OF LANDSCAPES. For the beſt Drawing of a Landſcape after nature, by perſons of either ſex under twenty-one years of age, to be produced on or before the third Tueſday in February, 1795, the greater SILVER PALLET.

197. For the next in merit, the leſſer SILVER PALLET.

Each Candidate muſt mention on the front of the Drawing, from whence the

View was taken; and the Drawings muſt be made with Chalk, Pen, Indian Ink, Water-Colours, or Biſter.

198. HISTORICAL DRAWINGS. For the beſt Hiſtorical Drawing, being an original compoſition, of five or more Human Figures; the height of the principal figure not leſs than eight inches; to be made with Crayons, Chalk, Black Lead, Pen, Indian Ink, Water-colours, or Biſter, and to be produced on or before the third Tueſday in February, 1795; the GOLD PALLET.

199. For the next in merit, the greater SILVER PALLET.

200. SURVEYS OF COUNTIES. To the perſon who, in the year 1794, ſhall complete and publiſh an accurate Survey of any one County in England or Wales, on a ſcale of not leſs than one inch to a mile, for which rewards have not already been given by the Society, the GOLD MEDAL, or FIFTY POUNDS.

CERTIFICATES of the accuracy of the Survey, and that it was begun after the

firſt of June, 1790, together with the Map, to be produced on or before the laſt Tueſday in January, 1795.

The Map to which the premium ſhall be adjudged, to remain the property of the Society.

N. B. The Society are already in poſſeſſion of Surveys of the following Counties, viz. Bedford, Cornwall, Devonſhire, Derbyſhire, Durham, Somerſetſhire, Northumberland, Suffolk, Leiceſterſhire, Cumberland, Lancaſhire, Dorſetſhire, Hampſhire, Glouceſterſhire, Herefordſhire, Hertfordſhire, Huntingdonſhire, Northamptonſhire, Nottinghamſhire, Weſtmorland, and Worceſterſhire.

201. The ſame premium is extended one year further.

The Survey to be begun after the firſt of June, 1791; and the Map to be produced on or before the laſt Tueſday in January, 1796.

202. The ſame premium is extended one year further.

The Survey to be begun after the firſt of June, 1792; and the Map to be produced on or before the laſt Tueſday in January, 1797.

203. The ſame premium is extended one year further.

The Survey to be begun after the firſt of June, 1793; and the Map to be produced on or before the laſt Tueſday in January, 1798.

204. NATURAL HISTORY. To the Author who ſhall publiſh, in the year 1794, the Natural Hiſtory of any County of England or Wales, the GOLD MEDAL, or FIFTY POUNDS.

It is required that the ſeveral natural productions, whether animal, vegetable, or mineral, peculiar to the county, or found therein, be carefully and ſpecifically arranged and deſcribed, in order that the Public may be enabled to judge what Arts or Manufactures are moſt likely to ſucceed in ſuch County.

The Work to be delivered to the Society on or before the laſt Tueſday in January, 1795. 205.

205. The ſame premium is extended one year further.

The Work to be delivered to the Society on or before the laſt Tueſday in January, 1796.

206. The ſame premium is extended one year further.

The Work to be delivered to the Society on or before the laſt Tueſday in January, 1797.

CONDITIONS.

No perſon who has gained the firſt Premium in any Claſs, will be admitted a Candidate in a Claſs of an inferior age; and no Candidate ſhall receive more than one Premium in one year; nor will they who for two ſucceſſive years ſhall gain the firſt Premium in one Claſs, be ever again admitted as Candidates in that Claſs.

No perſon ſhall ever be admitted a Candidate in any Claſs, in which he has three times obtained the whole of the firſt Premium.

No Candidate ſhall ſend in more than one Performance in any one Claſs.

All the Claims which are produced each year before the Committee of Polite Arts (to which Premiums or Bounties are adjudged) are to remain with the Society ſix weeks after the determination, unleſs the Candidates, for particular reaſons, do apply to have their performances returned.

No Claim for a Premium in the Polite Arts will be admitted, that has obtained,

or

or has been produced in order to obtain, a Premium, Reward, or Gratification, from any other Society, or any Academy or School.

All Performances that obtain Premiums in the Polite Arts, muſt be begun after the publication of ſuch Premiums.

Purpoſely to encourage real merit, and to prevent any attempts to impoſe on the Society, by producing Drawings which ſhall have been made or retouched by any other perſon than the Candidate, the Society is reſolved, upon all occaſions, with reſpect to the ſucceſsful Candidates in Claſſes 193 to 198 incluſive, to prove their abilities, by requiring a ſpecimen made under the inſpection of the Committee of Polite Arts, in every inſtance where ſuch proof can be obtained.

It is required that all Candidates in the Polite Arts do ſignify on their Drawings, their age, and whether the performances are originals, or copies, and, if copies, whence they were taken.

Premiums

Premiums for encouraging and improving Manufactures.

207. SILK. For the greateſt quantity of merchantable Silk, not leſs than ten pounds weight, produced by worms bred in England in the year 1794, the property of any one perſon, the GOLD MEDAL.

SPECIMENS of the SILK, not leſs than one pound, with CERTIFICATES that the whole is of equal quality, and produced in England, to be delivered to the Society on or before the firſt Tueſday in January, 1795.

208. For the ſecond greateſt quantity, not leſs than five pounds weight, the SILVER MEDAL.

209, 210. The ſame premiums are extended one year further.

The Specimens and Certificates to be delivered to the Society on or before the firſt Tueſday in January, 1796.

211. MACHINE FOR CARDING SILK. For the beſt Machine, ſuperior to any

any now in uſe, for carding Waſte Silk equally well as by hand; to be produced, together with a ſpecimen of the Cardings, on or before the firſt Tueſday in November, 1794; the GOLD MEDAL, or THIRTY POUNDS.

212. WEAVING FISHING-NETS. For the beſt ſpecimen of Plain Netting, for Fiſhing-Nets, ſuperior to any hitherto in uſe, not leſs than twenty yards long, and ſix feet deep, woven in a Loom, or other Machine; to be produced to the Society on or before the ſecond Tueſday in January, 1795; FIFTY GUINEAS.

N. B. It is expected that the Specimen produced be made in ſuch a manner, as to be cut and joined without more loſs than uſual, that it have ſuch a plain ſelvage as the common Fiſhing-Nets, and that the Knot be equally faſt with thoſe in Nets in common uſe, and as eaſily repaired.

213. CLOTH FROM HOP-STALKS OR BINES. To the perſon who ſhall produce to the Society the greateſt quantity,

tity, not leſs than thirty yards, of Cloth, at leaſt twenty-ſeven inches wide, made in England or Wales of Hop-Stalks or Bines, and ſuperior to any hitherto manufactured in England of that material, the GOLD MEDAL, or THIRTY POUNDS.

One pound of the Thread of which the Cloth is made, and thirty yards of the Cloth, together with proper CERTIFICATES that the whole is manufactured from Hop-Stalks or Bines, to be produced to the Society on or before the ſecond Tueſday in December, 1794.

N. B. The Society are already in poſſeſſion of Cloth made in England from Hop-Stalks or Bines, which may be inſpected by application to the Regiſter.

214. WICKS FOR CANDLES OR LAMPS. To the perſon who ſhall diſcover to the Society a method of manufacturing Hop-Stalks or Bines, ſo as to render them fit for the purpoſe of ſupplying the place of Cotton, for Wicks of Candles or Lamps, TWENTY GUINEAS.

SAMPLES,

SAMPLES, not leſs than five pounds weight, of the Wicks, ſo prepared, to be produced to the Society, with CERTIFICATES that the whole quantity is made from Hop-Stalks or Bines, on or before the ſecond Tueſday in January, 1795.

215. The ſame premium is extended one year further.

SAMPLES and CERTIFICATES to be produced on or before the ſecond Tueſday in January, 1796.

216. PAPER FROM RAW VEGETABLE SUBSTANCES. To the perſon in England or Wales who ſhall make the greateſt quantity, not leſs than ten reams, of the beſt and moſt uſeful Paper, from Raw Vegetable Subſtances, TWENTY GUINEAS.

CERTIFICATES of the making ſuch Paper, and one ream of the Paper, to be produced on or before the firſt Tueſday in November, 1794.

N. B. The Society are in poſſeſſion of two volumes, containing a great variety of ſpecimens

ſpecimens of Paper made from Raw Vegetables, viz. Thiſtles, Potatoe-Haum, Poplar, Hop-bines, &c. which volumes may be inſpected by any perſon, on application to the Regiſter.

217. MAINTAINING AND EMPLOYING THE POOR. To the perſon who ſhall produce to the Society, the beſt practical and moſt œconomical Plan for the maintenance and employment of the Poor in Pariſh Workhouſes, ſuperior to any hitherto generally known, the GOLD MEDAL, or FIFTY POUNDS.

The Plans to be delivered to the Society on or before the firſt Tueſday in March, 1795.

Premiums

Premiums for Invention in Mechanicks.

218. TRANSIT INSTRUMENT. To the perſon who ſhall invent and produce to the Society a cheap and portable Tranſit Inſtrument, which may eaſily be converted into a Zenith Sector, capable of being accurately and expeditiouſly adjuſted for the purpoſe of finding the Latitudes and Longitudes of places, and ſuperior to any portable Tranſit Inſtrument now in uſe, the GOLD MEDAL, or FORTY GUINEAS.

To be produced on or before the laſt Tueſday in January, 1795.

219. TAKING WHALES BY THE GUN-HARPOON. To the perſon who, in the year 1794, ſhall ſtrike the greateſt number of Whales, not fewer than three, with the Gun-Harpoon, TEN GUINEAS.

Proper CERTIFICATES of the ſtriking ſuch Whales, and that they were actually taken in the year 1794, ſigned by the Maſter, or by the Mate when the Claim is made by the Maſter, to be produced to the So-

ciety on or before the laſt Tueſday in December, 1794.

220. The ſame premium is extended one year further.

CERTIFICATES to be produced on or before the laſt Tueſday in December, 1795.

221. DRIVING BOLTS INTO SHIPS. To the perſon who ſhall invent and produce to the Society a Model, ſhewing a method of driving Bolts into Ships, particularly thoſe of Copper, without ſplitting the Head or bending them, with more diſpatch, in all directions, and tighter than by any means hitherto known or in uſe, THIRTY GUINEAS.

The Model, with CERTIFICATES that a Machine on the ſame conſtruction has been uſed to advantage, to be produced to the Society on or before the firſt Tueſday in February, 1795.

222. PORTABLE MACHINE FOR LOADING AND UNLOADING GOODS. To the perſon who ſhall invent and

and produce to the Society, the beſt, moſt ſimple, and portable Machine, ſuperior to any hitherto known, or in uſe, for the purpoſe of loading and unloading goods; the GOLD MEDAL, or FORTY GUINEAS.

The machine to be delivered to the Society on or before the firſt Tueſday in January, 1795.

223. METAL ROPE OR CHAIN. To the perſon who ſhall have invented a Chain or Rope of Copper, or other Metal, ſuperior to any hitherto made, ſufficiently flexible to work well, and in ALL DIRECTIONS, over pullies, and which ſhall ſerve every purpoſe of a good Hempen Rope, of at leaſt two inches diameter, the GOLD MEDAL, or FIFTY POUNDS.

The Candidate to produce to the Society ſatisfactory CERTIFICATES that ſuch Metal Rope or Chain has been uſed to advantage in manufactories, or large works, where Hempen Ropes have been hitherto employed.

The CERTIFICATES, and a Sample of the Metal Rope or Chain, not leſs than ten yards long, to be produced to the Society on or before the firſt Tueſday in November, 1794.

224. HAND MILL. To the perſon who ſhall produce to the Society a better conſtructed Hand Mill, for general purpoſes, than any now known or in uſe, the SILVER MEDAL, or TWENTY GUINEAS.

To be delivered to the Society on or before the laſt Tueſday in December, 1794.

225. MACHINE FOR RAISING COALS, ORE, &c. &c. To the perſon who ſhall invent a Machine for raiſing Coals, Ore, &c. from Mines, which ſhall produce the effect at a leſs expence than thoſe already known or in uſe, the GOLD MEDAL, or FIFTY GUINEAS.

A Model of the Machine, made on a ſcale of not leſs than one inch to a foot, to be produced to the Society on or before the ſecond Tueſday in February, 1795.

226.

226. MACHINE FOR RAISING WATER. To the perſon who ſhall invent a Machine on a better, cheaper, and more ſimple conſtruction than any hitherto known or in uſe, for raiſing Water out of Wells, &c. from a depth not leſs than fifty feet, the GOLD MEDAL, or FORTY GUINEAS.

CERTIFICATES of the performance of the Machine, and a Model of it, on a ſcale of not leſs than one inch to a foot, to be produced to the Society on or before the firſt Tueſday in February, 1795.

227. MACHINE FOR CLEARING RIVERS. For the beſt Model of a Machine, ſuperior to any now in uſe, for clearing Navigable Rivers from Weeds at the leaſt expence, the GOLD MEDAL, or FORTY GUINEAS.

To be produced to the Society on or before the firſt Tueſday in February, 1795.

228. METHOD OF EXTINGUISHING FIRES. To the perſon who ſhall

produce to the Society, the moſt ſpeedy and effectual method of extinguiſhing Fires in houſes or other buildings, ſuperior to any hitherto known or in uſe, the GOLD MEDAL, or FIFTY GUINEAS.

To be produced on or before the ſecond Tueſday in February, 1795.

229. PREVENTING WATER FREEZING IN PIPES. To the perſon who ſhall invent and diſcover to the Society a cheap and effectual Method, ſuperior to any hitherto in uſe, for preventing the Water freezing in Pipes, ſerving to ſupply dwelling-houſes or other buildings, the GOLD MEDAL, or THIRTY GUINEAS.

The ACCOUNTS, with proper CERTIFICATES of the utility of the method, to be delivered to the Society on or before the firſt Tueſday in March, 1795.

230. IMPROVEMENT OF WHEEL-CARRIAGES. To the perſon who ſhall diſcover to the Society the principles, and point out the conſtruction, upon which Wheel-

Wheel-Carriages may be drawn with the leaſt fatigue to the horſe or horſes employed, the GOLD MEDAL, or FIFTY POUNDS.

The CLAIMS to be delivered to the Society on or before the ſecond Tueſday in December, 1794.

231. PREVENTING HORSES TURNING ABOUT IN DRAWING WATER, &c. To the Perſon who ſhall invent and produce to the Society a Model, on a ſcale of not leſs than one inch to the foot, ſhewing an eaſy, ſafe, and expeditious method to obviate the neceſſity of the horſes employed in raiſing Water out of deep Wells, drawing Ore from Mines, or Coals from Pits, turning about at the time the Water, Ore, or Coal is delivered; the GOLD MEDAL, or FORTY GUINEAS.

The Model to be produced to the Society, with CERTIFICATES of a Machine on the ſame conſtruction having been

uſefully employed, on or before the firſt Tueſday in February, 1795.

232. The ſame premium is extended one year further.

The MODEL and CERTIFICATES to be produced on or before the firſt Tueſday in February, 1796.

Premiums

Premiums offered for the Advantage of the Britiſh Colonies.

233. NUTMEGS. For the greateſt quantity of merchantable Nutmegs, not leſs than ten pounds weight, being the growth of his Majeſty's dominions in the Weſt Indies, or any of the Britiſh Settlements on the Coaſt of Africa, or the ſeveral Iſlands adjacent thereto, and equal to thoſe imported from the Iſlands of the Eaſt Indies, the GOLD MEDAL, or ONE HUNDRED POUNDS.

Satisfactory CERTIFICATES, from the Governor, or Commander in Chief, of the place of growth, with an account of the number of trees, their age, nearly the quantity of fruit on each tree, and the manner of culture, to be produced on or before the firſt Tueſday in December, 1794.

234. The ſame premium is extended one year further.

CERTIFI-

CERTIFICATES to be produced on or before the ſecond Tueſday in December, 1795.

235. CINNAMON. For importing into the port of London, in the year 1794, the greateſt quantity, not leſs than twenty pounds weight, of Cinnamon, being the growth of ſome of the Iſlands in the Weſt-Indies belonging to the Crown of Great-Britain, or any of the Britiſh Settlements on the Coaſt of Africa, or the ſeveral Iſlands adjacent thereto, and equal in goodneſs to the Cinnamon brought from the Eaſt-Indies, the GOLD MEDAL, or FIFTY POUNDS.

SAMPLES, not leſs than two pounds weight, with CERTIFICATES that the whole quantity is equal in goodneſs; together with ſatisfactory CERTIFICATES, ſigned by the Governor, or Commander in Chief, of the place of growth, with an account of the number of trees growing on the ſpot, their age, and the manner of culture; to be produced to the Society, on or before the firſt Tueſday in January, 1795.

236. The

236. The ſame premium is extended one year further.

The SAMPLES and CERTIFICATES to be produced on or before the firſt Tueſday in January, 1796.

237. PLANTATIONS OF BREAD-FRUIT TREE. To the perſon who ſhall have raiſed in any of the Iſlands of the Weſt-Indies ſubject to the Crown of Great Britain, or in any of the Britiſh Settlements on the Coaſt of Africa, or the ſeveral Iſlands adjacent thereto, between the firſt of January, 1795, and the firſt of January, 1796, the greateſt number of Bread-fruit Trees, not fewer than one hundred, and properly fenced and ſecured the ſame, in order to ſupply the Fruit to the Inhabitants, the GOLD MEDAL, or THIRTY GUINEAS.

Proper ACCOUNTS and CERTIFICATES, ſigned by the Governor or Commander in Chief, of the methods made uſe of in cultivating the Plants and ſecuring the Plantation, and that the Trees are in a growing

and

and thriving ſtate at the time of ſigning ſuch Certificates, to be produced to the Society on or before the firſt Tueſday in January, 1797.

238. The ſame premium is extended one year further.

The ACCOUNTS and CERTIFICATES to be produced on or before the firſt Tueſday in January, 1798.

239. KALI FOR BARILLA. To the perſon who ſhall have cultivated, in the Bahama Iſlands, or any other part of his Majeſty's dominions in the Weſt Indies, or any of the Britiſh Settlements on the Coaſt of Africa, or the ſeveral Iſlands adjacent thereto, in the year 1792, the greateſt quantity of land, not leſs than two acres, with Spaniſh Kali, fit for the purpoſe of making Barilla, the GOLD MEDAL, or THIRTY GUINEAS.

240. For the next greateſt quantity, not leſs than one acre, the SILVER MEDAL, or FIFTEEN GUINEAS.

CERTIFICATES

CERTIFICATES, ſigned by the Governor or Commander in Chief for the time being, of the quantity of land ſo cultivated, and of the ſtate of the Plants at the time of ſigning ſuch Certificates, to be delivered to the Society on or before the ſecond Tueſday in November, 1794.

241, 242. The ſame premiums are extended one year further.

CERTIFICATES to be produced on or before the laſt Tueſday in November, 1795.

243, 244. The ſame premiums are extended one year further.

CERTIFICATES to be produced on or before the ſecond Tueſday in November, 1796.

245. DISCOVERY OF A PASSAGE BY LAND, FROM UPPER CANADA TO THE SOUTH SEA. To the perſon who ſhall firſt diſcover and open a paſſage by land, from the north-weſt parts of Upper Canada to the South Sea, between Nootka Sound and the Straits of Kamchatka,

chatka, or to the navigable part of any River that diſembogues itſelf into the South Sea within thoſe limits, the GOLD MEDAL.

Such Diſcovery to be aſcertained by a CERTIFICATE under the hand and ſeal of the Governor, or Commander in Chief for the time being, of the ſaid province of Upper Canada.

246. DESTROYING THE INSECT COMMONLY CALLED THE BORER. To the perſon who ſhall diſcover to the Society an effectual method of deſtroying the Inſect commonly called the BORER, which has of late years been ſo deſtructive to the Sugar-Canes in the Weſt-India Iſlands, or any of the Britiſh Settlements on the Coaſt of Africa, or the ſeveral Iſlands adjacent thereto, the GOLD MEDAL, or FIFTY POUNDS.

The Diſcovery to be aſcertained by ſatisfactory CERTIFICATES, under the hand or ſeal of the Governor or Commander in Chief for the time being, and of ſome other

reſpectable perſons, inhabitants of the Iſlands, or other place, in which the remedy has been ſucceſsfully applied; ſuch CERTIFICATES to be delivered to the Society on or before the firſt Tueſday in January, 1795.

247. The ſame premium is extended one one year further.

CERTIFICATES to be delivered on or before the firſt Tueſday in January, 1796.

248. BOTANIC GARDEN IN THE BAHAMA ISLANDS. To the perſon who, before the firſt of January, 1795, ſhall ſet apart and properly fence and cultivate, the greateſt quantity of ground, not leſs than five acres, in any of the Bahama Iſlands, as a botanic garden, for the purpoſe of making experiments in the culture of thoſe articles which are the peculiar production of the tropical climates, and which may tend to promote the commerce and manufactures of this country; the GOLD MEDAL, or ONE HUNDRED GUINEAS.

It

It is required that any perſon claiming the foregoing premium, ſhould produce to the Society, on or before the firſt Tueſday in January, 1796, a CERTIFICATE from the Governor or Commander in Chief of the Bahama Iſlands for the time being, of his having complied with the above requiſitions, and that the Garden is in a proper ſtate of culture at the time of ſigning ſuch Certificate.

249. The ſame premium is extended one year further.

CERTIFICATES to be produced on or before the firſt Tueſday in January, 1797.

250. The ſame premium is extended one year further.

CERTIFICATES to be produced on or before the firſt Tueſday in January, 1798.

Society's

Society's Office, Adelphi, May 9, 1794.

Ordered,

THAT THE SEVERAL CANDIDATES AND CLAIMANTS TO WHOM THE SOCIETY SHALL ADJUDGE PREMIUMS OR BOUNTIES, DO ATTEND AT THE SOCIETY'S OFFICE IN THE ADELPHI, ON THE LAST TUESDAY IN MAY, 1794, AT TWELVE O'CLOCK AT NOON, TO RECEIVE THE SAME; THAT DAY BEING APPOINTED BY THE SOCIETY FOR THE DISTRIBUTION OF THEIR REWARDS: AND BEFORE THAT TIME NO PREMIUM OR BOUNTY WILL BE DELIVERED, EXCEPTING TO THOSE WHO ARE OUT OF THE KINGDOM, OR PREVENTED BY UNAVOIDABLE ACCIDENTS.

IN CASES WHERE THE SOCIETY MAY THINK FIT TO ADMIT EXCUSES FOR NOT ATTENDING IN PERSON, DEPUTIES MAY BE SUBSTITUTED TO RECEIVE THE REWARDS, PROVIDED SUCH DEPUTIES ARE EITHER MEMBERS OF THE SOCIETY, OR THE SUPERIOR OFFICERS THEREOF.

GENERAL CONDITIONS.

NOTWITHSTANDING the Society reſerve to themſelves the power of giving, in all caſes, ſuch part only of any premium as the Performance ſhall be adjudged to deſerve, or of withholding the whole, if there be no merit; yet the Candidates may be aſſured the Society will always judge liberally of their ſeveral claims.

It is required that the matters for which Premiums are offered, be delivered in without names, or any intimation to whom they belong; that each particular thing be marked in what manner each Claimant thinks fit, ſuch Claimant ſending with it a paper ſealed up, having on the outſide a correſponding mark, and on the inſide the Claimant's name and addreſs: and all Candidates are to take notice, that no claim for a Premium will be attended to, unleſs the conditions of the Advertiſement are fully complied with.

No

No Papers ſhall be opened, but ſuch as ſhall gain Premiums, unleſs where it appears to the Society abſolutely neceſſary for the determination of the Claim: all the reſt ſhall be returned unopened, with the Matters to which they belong, if inquired after by the Marks, within two years; after which time, if not demanded, they ſhall be publicly burnt, unopened, at ſome meetting of the Society.

All Models of Machines, which obtain Premiums or Bounties, ſhall be the property of the Society.

All the Premiums of this Society are deſigned for that part of Great Britain called England, the dominion of Wales, and the Town of Berwick upon Tweed, unleſs expreſsly mentioned to the contrary,

The Claims ſhall be determined as ſoon as poſſible after the delivery of the ſpecimens.

No perſon ſhall receive any Premium, Bounty, or Encouragement, from the So-

ciety, for any matter for which he has obtained, or propoſes to obtain, a patent.

A Candidate for a Premium, or a perſon applying for a bounty, being detected in any diſingenuous method to impoſe on the Society, ſhall forfeit ſuch Premium or Bounty, and be deemed incapable of obtaining any for the future.

The Performances which each year obtain Premiums or Bounties, are to remain with the Society until the end of May, except as mentioned in the Conditions annexed to the Premiums offered for promoting the Polite Arts.

No Member of this Society ſhall be a Candidate for, or entitled to receive, any Premium, Bounty, or Reward whatſoever, except the Honorary Medal of the Society.

Where Certificates are required to be produced in claim of Premiums, they ſhould be expreſſed, as nearly as poſſible, in the words of the reſpective advertiſements, and ſhould not be from the Candidate

(ſolely)

(ſolely), but from ſome other perſon or perſons who have a poſitive knowledge of the facts certified.

Where Premiums or Bounties are obtained in conſequence of ſpecimens produced, the Society mean to retain ſuch part of thoſe ſpecimens as they may judge neceſſary, making a reaſonable allowance for the ſame.

No Candidates ſhall be preſent at any meetings of the Society or Committees, or admitted at the Society's Rooms, after they have delivered in their Claims, until ſuch Claims are adjudged, unleſs ſummoned by the Committee.

N. B. Any information or advice that may forward the deſigns of this Society for the public good, will be received thankfully, and duly conſidered, if communicated by letter, addreſſed to the Society, and directed to Mr. More, the Secretary, at the Society's Office, in the Adelphi Buildings, London.

*** In caſe any perſon ſhould be inclined to leave a ſum of money to this Society, by will, the following form is offered for that purpoſe:

Item. I give and bequeath unto A. B. and C. D. the ſum of upon condition and to the intent that they, or one of them, do pay the ſame to the Collector for the time being of a Society in London, who now call themſelves the Society for the Encouragement of Arts, Manufactures and Commerce; which ſaid ſum of I will and deſire may be paid out of my perſonal eſtate, and applied towards the carrying on the laudable deſigns of the Society.

By order of the Society,

SAMUEL MORE, Secretary.

PAPERS

IN

AGRICULTURE.

AGRICULTURE.

THE GOLD MEDAL was this ſeſſion voted to JOB HANMER, of Holbrook-Hall, near Sudbury, Suffolk, Eſq. for the following Account relative to a PLANTATION of OAK and other TREES, made by him.

SIR,

I TAKE this opportunity of tranſmitting to you the following account, as directed by the printed Abſtract of Premiums, viz. —For raiſing not fewer than five thouſand Oaks to remain for timber and underwood; —the whole number planted on my land being eight thouſand one hundred healthy fine Plants, three years old, and ſet between February 1792 and February 1793, the interſtices planted with tranſplanted Aſh, there

three years old, raiſed from Keys, to remain for underwood, poles, coopers ſtuff, &c. well fenced with oak poſts, pales, and rails, and by ditches five feet wide and four feet deep, planted with three rows of fine white-thorn layer, intermixed with Oak and Aſh. If the above ſtatement, which is correct, deſerves the notice of the Society, I ſhall be happy in attaining a mark of their approbation.

I am, Sir,

Your obliged humble Servant,

JOB HANMER.

Holbrook Hall,
near Sudbury, Suffolk.
February 27, 1793.

Mr. MORE.

SIR,

I RECEIVED the favour of yours; for which accept my thanks. When I had the honour of tranſmitting to the So-

ciety for the Encouragement of Arts, Manufactures, and Commerce, my ſtatement of Oaks raiſed from Acorns, and tranſplanted into Plantations well fenced, in the manner I expreſſed in my former letter to you, I conceived my claim to be founded upon the ninth claſs of Premiums for the year 1792; and, having myſelf raiſed from Acorns, and alſo removed into Plantations, upwards of five thouſand Oaks, interſperſed with moſt kind of Foreſt-plants for Underwood, and the different ſorts of Firs, Larch, &c. to nurſe up the young Oaks which are to remain for Timber, I flattered myſelf that a repreſentation of it to the Society would not be thought intruding: at the ſame time I confeſs I was ambitious of meriting their attention, which, ſhould I attain, ſhall eſteem a high honour. Indeed, the number of plants far exceed the number above ſtated, and are in good condition, and much added to this year; and I can venture to ſay I can produce ſpecimens of young Oaks, both Engliſh and American, that

that have ſhot full four feet in one year; they were not raiſed from ſeed by me, but planted in a very infant ſtate, and are of no longer growth with me than ſix years; and I will venture to ſay that they have increaſed in ſize, as well as height, equal to the moſt luxuriant Fir, and are, indeed, beautiful ſpecimens of Timber-trees in miniature; I beg leave to obſerve that in two of the plantations the Oak and Aſh are alternate. Your laying this before the Society will be eſteemed a favour, and I ſhall be happy to be allowed to communicate any improvement that may reſult from my endeavours in this ſcience, and am,

Sir,

Your obliged humble Servant,

JOB HANMER.

Holbrook Hall,
January 18, 1794.

Mr. MORE.

The

The GOLD MEDAL, being the Premium offered for the CULTURE of the CHESNUT-TREE, was this ſeſſion adjudged to LEWIS MAJENDIE, of Hedingham-Caſtle, Eſſex, Eſq. and the SILVER MEDAL to JOHN SCHOLEFIELD, Firth, of Kipping, near Bradford, Yorkſhire, Eſq. from whom the following Papers and Certificates were received.

SIR,

THE flattering manner in which the Society for the Encouragement of Arts, Manufactures, and Commerce, were pleaſed to confer their thanks upon my former obſervations on the culture and the utility of the Cheſnut-Tree (ſee Vol. IX. page 17), induces me again to addreſs them upon the ſame ſubject; which I enter upon with the greater ſatisfaction, from a confidence reſulting from that increaſed experience to which the Society's approbation, hath, in ſo great meaſure, contributed.

The

The high opinion I ſome years ſince entertained of the merits of the Cheſnut-Tree, is now greatly increaſed; and, in propoſing myſelf a candidate for the Society's honours, it becomes my duty to ſubmit to them ſuch accounts concerning it, as obſervation, or authentic information, have enabled me to poſſeſs, together with the methods purſued by me, in forming a conſiderable plantation of this Tree, with the view of extending its culture and valuable uſes.

It is commonly ſuppoſed, that the Cheſnut-Tree is indigenous, and that formerly large tracts of ground were to be ſeen covered with this Tree. It muſt not be expected from me to enter at large upon the diſcuſſion of a queſtion, which, beſides having been the ſubject of abler pens, would exceed the limits of a paper intended to be for the moſt part practicable. Thoſe who wiſh for information on this head, will meet with it in ſeveral ingenious papers in the 59th and 61ſt Volumes of the Philoſophical Tranſactions, in which much ingenuity

is

is diſplayed on both ſides the queſtion; though, on the whole, the matter remains undecided, and open to future diſcuſſion.

The uſes of this excellent Tree were certainly well known to our anceſtors; this appears from the great quantities of Cheſnut-Timber, ſo often found in many ancient buildings in various parts of England: yet this circumſtance, however clearly it may ſhew the eſtimation in which this wood was formerly held, will not amount to a proof of its being indigenous. Evelyn ſays (Silva, vol. i. p. 161. *edit. York*, 1786): "Some "will not allow the Cheſnut to be a free-"born of this Iſland; but of that I have "little doubt:" yet his learned and ingenious commentator, Dr. A. Hunter, in a note on this very paſſage, judiciouſly obſerves, "I do not take upon me to ſay, "whether the Cheſnut be a native of "the ſouthern parts of this iſland, or "not; but, I am well informed no ſuch "tree has ever been diſcovered in any of "the natural woods north of Trent."

"But

But, admitting for a moment, from the great uſe formerly made in England of the Cheſnut, that it really is indigenous; it will ſtill be moſt difficult to give any ſatisfactory reaſon for the preſent general ſcarcity (I had almoſt ſaid total failure) of this uſeful Tree; unleſs we allow a cauſe aſſigned by an author of repute for a ſimilar ſcarcity of this tree in France to have the ſame weight with us.

As the words of this author are very remarkable, I venture to trouble the Society with a tranſlation of them, without any comment whatever on my part.

" The Cheſnut is a great and lofty tree, " growing naturally in the temperate lati- " tudes of Weſtern Europe: whatever " may be the cauſe, it is leſs common now " than formerly; and it is to be lamented " that no Cheſnut-Trees are now to be " found in the foreſts of many Provinces, " the old buildings of which abound with " this timber. This Tree, from its ſize " and utility, has deſervedly been ranked

" in the firſt order of Foreſt-Trees; and " it is generally allowed to give place to " the Oak alone. It manifeſtly appears " from the records of the city of Orleans, " that the foreſt of Orleans has been ob- " ſerved to change alternately the ſpecies " of its timber; to have been for a ſpace " of time in Oak, then in Cheſnut, and " afterwards in Oak again: in the woods " of Oak many young Cheſnut-Trees are " found intermixed, which, being over- " powered, make but ſlow progreſs; when " the former are felled, the latter enjoying " a freer current of air, grow vigorouſly, " choak the young ſhoots of the Oak, and " aſſume their ſituations: the ſame has been " remarked in other Foreſts."—(See Dictionnaire Univerſel, par Mr. Valmont Bornaſe, Art Chataigner, 8vo. edit. Lyons, 1791.)

As the ſcarcity in England of this valuable Tree cannot be denied, it ſeems incumbent on the preſent and ſucceeding generations (leaving all controverſy about the ſituations of its natural growth out of

the queſtion), to endeavour, by liberal and extenſive culture, fully to poſſeſs a plant of ſuch general uſe; and which is known to flouriſh ſo well in this country.

In the firſt volume of the Philoſophical Tranſactions, it is obſerved, that Mr. Dale, in his hiſtory of Harwich, mentions various Cheſnut-Trees to be growing in Stour Wood, within the pariſh immediately adjoining to Harwich. As my reſidence in the county of Eſſex has afforded me frequent opportunities of inſpecting this Wood, I ſhall communicate to the Society my obſervations thereon, as well as the information relating to the Cheſnut, which I was at ſeveral times able to collect on the ſpot.

The Stour Wood, near Harwich, part of the eſtate of Nathaniel Garland, Eſq. is of conſiderable magnitude, abounding with Cheſnut; and I obſerved with great ſatisfaction, that its valuable uſes are well known, and held in due eſtimation. It is almoſt entirely treated as underwood; for I remarked few, if any, timber trees of the Cheſnut,

hut, though there are many Oaks of large and beautiful growth. The Cheſnut Stools ſeem of great age, and the Poles are uſually felled at eighteen years growth; at which age they are deemed of ſufficient ſize for the uſes to which they are applied.

Theſe are, the following—gates, ſtiles, and hurdles, which from their lightneſs and durability are preferred to thoſe of Oak: ſome of the gates are known to have ſtood fifteen, twenty, and with repairs more than twenty-five years, on the farms of the eſtate. For joiſts in ſmall buildings it is alſo found very durable; but one of the chief uſes to which the Cheſnut is applied in theſe parts, is ſea-walling, or embankments againſt the ſea, for which purpoſe it is cut into piles about five feet long and ten inches thick, which are driven about three feet into the earth. If the ſoil be a coheſive ooze, their duration is ſuch that it is difficult to ſay how many years they will laſt. The effects of time upon them is a gradual wearing, or diminution of the ſubſtance, without rotting the remaining part; which,

when removed, however diminiſhed from its original ſize, is found of the greateſt hardneſs to the laſt: the ſame obſervation has alſo been made concerning the duration of hop-poles of this wood. If the ſoil is ſandy, the piles will not laſt ſo long; for this uſe, however, the Cheſnut is greatly preferred to every other wood.

Beſides the above eſſential uſes, it is employed in a more ſubordinate line, for ladder ſteps, pins for barn floors, and laths, eſpecially thoſe uſed in thatching, in all which it is found equally durable to the hardeſt Oak. I am indebted to Mr. Thomas Woodruffe, a perſon of intelligence and candour, a principal tenant upon the eſtate, for the above information.

Amidſt the numerous advantages attending this Tree, none is of greater import, than the early ſtate in which it is convertible to general uſe; for, unlike the Oak, which requires a great length of time before it can be felled with advantage, the Cheſnut, from its rapid growth and ſmall portion of ſap, may be applied to any purpoſe

poſe for which it poſſeſſes ſufficient ſize and proportion; and this happy quality leads me to obſerve that, except where this tree is wanted for large ſcantlings in the great ſcale of building, it will anſwer beſt as underwood, by furniſhing a periodical return of freſh wood, ſuperior (in reſpect of this ſpecies) to its timber, as this underwood will generally prove ſounder and leſs ſhaken than that of timber growth; for, with all the merits belonging to this tree, we muſt confeſs that thoſe of large ſize, or great age, are generally obſerved to be greatly ſhaken.

It may alſo be obſerved that, treated as underwood, it is reducible to uſe for out-door work with the leaſt poſſible workmanſhip; for, if it be only large enough for the purpoſe intended, the axe and plane are generally ſufficient to ſhape it; whereas the Oak muſt be ſawed, the ſap (ſo inconſiderable in the Cheſnut) muſt be rejected, and the inward part, or heart, alſo ſawed, before it can be truſted to the effects of the weather.

I now proceed to lay before the Society the particulars of a plantation of this tree, formed by me in the courſe of laſt winter.—A field, containing by admeaſurement ten acres three roods and five poles, the ſoil a loam upon a clay, except in ſome few ſpots where the ſubſtratum is a gravel, was fixed on for this purpoſe; the whole was trenched to a depth from fifteen to eighteen inches.

I have ſo often experienced the great ſuperiority attending this operation, previous to all kinds of planting, as well as the ill effects from its omiſſion, that I have long deemed it indiſpenſible to the future welfare of my plantations. By this proceſs the upper, which is uſually the beſt ſoil, is ſubverted, to the great advantage of the roots; and the under-ſoil brought up to the beneficial influence of the atmoſphere; ſo that the plants, having ample room, vegetate without reſtraint; the young and tender roots eſtabliſh themſelves without difficulty in the looſened earth, and generally acquire, in the very firſt ſtage of their growth, a cer-

tain air of general health and vigour very different from thoſe where this uſeful precaution hath been omitted *. Upon the land thus prepared, the young Cheſnut-trees were planted, at an interval of about four feet, and in the quincunx order: moſt of theſe trees were ſeedlings, and the number planted exceeds twenty-nine thouſand: of theſe, all, except about four thouſand, were raiſed by my myſelf from nuts ſown in beds, and the young trees tranſplanted as above deſcribed. The Cheſnut having generally a tap root, I uſed the ſame caution in planting thoſe as with the Oaks, concerning which I communicated an account to the Society upon a former occaſion (ſee Vol. X. page 3. of theſe Tranſac-

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* Other reaſons in defence of this uſeful practice may be ſeen in the ingenious Mr. Marſhall's Rural Œconomy of the Midland Counties, Vol. II. p. 400 and 401, *edit.* 1790. See alſo Planting and Ornamental Gardening, p. 26, *edit.* 1785: this is a moſt excellent and uſeful treatiſe for inexperienced perſons in planting, &c. and is, I believe, by the above author.

tions); they were brought up entire from the ſeed bed, and let into the earth without ſhortening their roots.

The ſummer of 1793 proved, as is well known, unuſually dry and ſultry; the trees have however ſuffered hardly at all, and are at preſent in a moſt thriving ſtate. This I attribute in a great meaſure to the due preparation of the ſoil by trenching, together with the great care uſed in planting the trees, in which, beſides the precautions uſual in ſuch caſes, we were careful to remove no more from the ſeminary, than we could eaſily plant in the courſe of the ſame day.

I am not without ſtrong and well-founded hopes that this plantation will fully anſwer the ends propoſed in forming it; one of the chief of which is the inducing a general good opinion of this neglected tree to the neighbourhood, founded upon the beſt grounds, a practical knowledge of its excellent qualities: this will, I truſt, be followed by its extenſive culture.

The

The advantages to be derived from the culture of this tree, are, by the foſtering care of the Society for the encouragemnt of Arts, Manufactures, and Commerce, now fairly before the public (ſee Tranſactions, Vol. VII. p. 10. Vol. VIII. p. 6. Vol. IX. p. 17. Vol. X. p. 27).

The aſſertions concerning this tree are not viſionary and ſpeculative, but ſuch as, from confirmed experience, will bear the teſt of the ſtricteſt enquiry.

I ſhould have obſerved before this, that the Cheſnut delights in loamy, ſandy ſoils, and will ſucceed well in light clay or gravel; I have ſeen it alſo grow vigorouſly in mere ſands; and in general it prefers ſoils of looſe texture. In ſtiff clays, or ſoils generally wet, it makes very indifferent progreſs. This I ſay from experience.

The bark is ſometimes uſed for the purpoſes of tanning; but it is greatly inferior to that of Oak, ſelling for only half its price. The aſhes of Cheſnut Wood are ſaid to be

uſeleſs

uſeleſs in lye for waſhing, as they damage, and even ſpoil the linen*.

Before I conclude, Sir, I cannot avoid expreſſing the ſatisfaction I felt in the peruſal of a paper in the Tenth Volume of the Society's Tranſactions, upon the utility of the Cheſnut-Tree, from the pen of a gentleman whoſe experience on theſe ſubjects is ſo generally admitted †. It can never be matter of indifference to me, to obſerve his ſentiments ſo entirely corroborate my own on a ſubject which has, for ſome time paſt, been a chief object of my particular attention and ſtudy.

I have the honour to remain,

Sir,

Your moſt obedient, humble Servant,

LEWIS MAJENDIE.

Hedingham Caſtle, Eſſex,
November 1, 1793.

Mr. MORE.

* Haller, Hiſtoria Stirpium, fol. Vol. II. page 294, *edition* Berne, 1768. Evelyn's Silva, Vol. I. p. 162. *edit.* York, 1786. Valmont, Art Chataignier, Vol. III. p. 297. Lyons, 1791.

† Nathaniel Kent, Eſq.

THIS

THIS is to certify that a field, called Kenall Croft, in the parish of Castle-Hedingham, in the county of Essex, containing ten acres three roods and five poles, was, by order of Lewis Majendie, Esq. planted with Chesnut-Trees, between the first of October 1792, and the first of April 1793; upon each acre two thousand seven hundred trees were planted in rows, about four feet apart. The whole field, before planting, was double dug; and the trees at this time are in a most healthy state.

It is also further certified that the above plantation is securely fenced; and that the whole workmanship of double digging and planting was executed by myself, with necessary assistants.

JAMES MONTGOMERY,
Gardener to Lewis Majendie, Esq.

Castle Hedingham,
Nov. 1, 1793.

I JOHN STORER, of Halſtead, in the county of Eſſex, land-ſurveyor, do certify that I meaſured the field, called Kenall Croft, now planted with Cheſnut-Trees, by order of Lewis Majendie, Eſq. and that it contains ten acres three roods and five poles.

Halſtead,
Nov. 1. 1793. JOHN STORER.

WE, the Miniſter and Churchwardens of the pariſh of Caſtle Hedingham, in the county of Eſſex, do hereby certify that we have viewed the Cheſnut Plantation called Kenall-Croft, in the pariſh aforeſaid; and we do verily believe the above certificates, ſigned by James Montgomerie and John Storer, to be ſtrictly true.

GEORGE CASWALL, Curate of the pariſh of Caſtle Hedingham.

B. MYAL, Churchwarden.

Caſtle Hedingham,
Nov. 1. 1793.

SIR,

SIR,

I BEG leave to trouble you to preſent to the Society for the Encouragement of Arts, Manufactures, and Commerce, the encloſed certificates: they atteſt my having planted eight acres and two roods with nineteen hundred Spaniſh Cheſnut plants, and fourteen hundred of the nuts in one encloſure, being a high mountainous ſituation, in this pariſh.

To theſe certificates, in conformity with the direction of the Society, I alſo add an account of the method purſued by me in making this plantation.

One part of the plantation, containing ſix acres and two thirds, was ploughed over laſt year to the depth of from eight to twelve inches, although it was new encloſure, and covered with a ſhort heath; after which it was harrowed and croſs-harrowed in various directions, at different periods of time, with heavy harrows at firſt, and afterwards with lighter ones, till it became by

ſix

ſix or eight harrowings as fine as a fallow, and very little of the heath perceptible, except in ſome few places: a ſmall tuft, about one acre, of the above, which was a ſtronger ſoil than the reſt, did not get quite ſo fine. The remaining part, being extremely full of large earth-faſt ſtones, was marked out for the plants, and the earth graved up, where each plant was to ſtand one ſpit deep, and afterwards dug up another ſpit, with a proper inſtrument to break and pulverize the ſoil; each hole being then about fifteen inches diameter, and the looſe earth twelve inches deep. The plants for the holes were two-years old ſeedlings, carefully taken from the ſeed bed with their roots entire, and were planted without ſhortening them, or remaining long out of the ground: thoſe upon the ploughed ground, were on the fineſt part of it, one-year ſeedlings for the moſt part, ſome two; and near to the north and weſt ſides, three-years ſeedlings, and other tranſplanted ones in the outſide rows next to the fences two feet in height. The plants and nuts were ſet

in

in rows alternately, amongſt a variety of other plants adapted to the ſoil; ſome at the diſtance of four yards aſunder, others at twice the diſtance; but nuts wholly in that part of the ground that had been turned by the plough.

At the time of forming this plantation (November, 1792) I arranged them in this manner, with a view to a compariſon betwixt the plants and nuts. Upon examination, on the 28th inſtant, as well as at ſeveral other times during the ſummer, I find, upon the ploughed acre of the ſtrongeſt ſoil, the greateſt failure of plants from the nuts, to the amount, upon the whole ground, of two hundred; but among the trees planted, not fifty had failed, leaving upon the eight acres three thouſand and fifty healthy, thriving plants, no one acre having ſo few in number as three hundred plants; the underſtratum being a dry loamy ſoil, except ſome few ſmall patches conſiſting of black light earth upon a gravel, in which the plants do not fail in any remarkable degree.

Amongſt

Amongſt the various kind of plants intermixed with the Cheſnuts, are Aſh, Beech, Birch, Elm, Scotch Fir, Spruce Fir, Hornbeam, Larch, Oak and Sycamore, Red Willow Cuttings, &c.

The plantation is ſecurely fenced by a ſufficient ſtone wall, and in a very flouriſhing condition, far beyond what could be expected after ſuch a dry ſummer; the trees ſeeming ſuited to the ſoil. The plants upon three acres had a little manure, but I cannot as yet obſerve any ſervice it has been of to them. I have no room to doubt the future ſucceſs of the plantation; and, if the obſervations I herewith trouble you to preſent to the Society be worthy their notice, it will add very conſiderably to the pleaſure I have received in forming it.

I have the honour to be,
Sir,
Your much obliged and obedient Servant,
JOHN SCHOLEFIELD FIRTH.

Kipping, near Bradford, Yorkſhire,
October 31, 1793.

Mr. MORE.

I THOMAS ROBERTSHAW, ſervant to John Scholefield Firth, of Kipping, in the county of York, Eſq. do hereby certify that with proper aſſiſtants I planted, upon eight acres of new incloſed ground, one thouſand nine hundred Spaniſh Cheſnut Plants, beſides one thouſand four hundred of the nuts, in one incloſure, in the pariſh of Badford, at the diſtances of nine and twelve feet betwixt the plants, three hundred of which were one-year ſeedlings, the reſt two and three years; except the two outſide rows, which were two feet in height, and tranſplanted: they were planted without cutting, or any way ſhortening the roots: they are at this preſent time, and alſo thoſe raiſed from the nuts, in a moſt promiſing and thriving ſtate, having grown very luxuriantly, and been this day examined by me.

They are ſecurely fenced, and bid fair to become in due courſe of time very profitable

Timber-Trees. I further certify that there are upwards of three hundred healthy Spaniſh Cheſnut-Trees now growing upon each acre in the above encloſure.

THOMAS ROBERTSHAW,
Gardener to J. Scholefield Firth, Eſq.

Kipping, Nov. 1. 1793.

WE do hereby certify that we have this day (as well as frequently at other times heretofore) viſited the plantation in the aforeſaid Certificates referred to and particulariſed, by deſire of John Scholefield Firth, Eſq. of Kipping aforeſaid, within our townſhip of Thornton; and that the aforeſaid plants or trees are in a very thriving ſtate, and ſecurely fenced, with a ſtone fence; that, having witneſſed the forming of the ſaid plantations, we fully believe the above account and certificates (the one ſigned by the ſaid John Scholefield Firth, and

and the other by his gardener, Thomas Robertſhaw) to be ſtrictly true.

J. SCHACKLETON, Miniſter.
JOHN WHITAKER, Conſtable of Thornton aforeſaid.

Thornton, Nov. 2. 1793.

The GOLD MEDAL, being the firſt Premium offered for having planted LARCHES between Midſummer 1790 and 1791, was this Seſſion adjudged to the Rev. THOMAS DUNHAM WHITAKER, of Holme, in Cliviger, in Lancaſhire; and the ſecond Premium, the SILVER MEDAL, to Mr. THOMAS GAITSKELL, of Little Braithwait, in Cumberland; in conſequence of the following Accounts and Certificates being received.

WE, whoſe names are underwritten, do certify from our own knowledge, that many acres of land were planted with Larches upon the eſtate of the Rev. Thomas Dunham Whitaker, at Holme, in Cliviger, in the county of Lancaſter and pariſh of Whalley, betwixt June 1790 and June 1791; that the ſame are properly fenced and ſecured againſt ſheep and other

cattle: and though we have not counted the plants ourſelves, we have every reaſon to believe that the number ſpecified in the annexed depoſition, viz. ſixty-four thouſand one hundred and thirty-five, is ſtrictly true.

W. HALLIWELL, Miniſter of Holme.
ROBERT DEARDEND, } Churchwardens.
JAMES WALMSLEY, }

December 5, 1793.

LANCASHIRE, *to wit.* } JOHN TATE, of Holme, in Cliviger, in the county of Lancaſter, gardener to Thomas Dunham Whitaker of the ſame place, Clerk, maketh oath before me, John Hargreave, Clerk, one of the Juſtices of the Peace in and for the ſaid county, this ſecond day of December, 1793—That ſixty-four thouſand one hundred and thirty-five Larches, between two and four years old, were planted, under the direction and ſuperintendence of the deponent, at Holme, in the pariſh of Whalley and county aforeſaid, betwixt the

month of June 1790, and the month of June 1791; that the ſame are properly fenced and ſecured againſt ſheep and other cattle, by high ſtone walls and hedges; and that, having been carefully cleanſed and weeded, and the failing plants replaced, they are at preſent in a thriving condition, and are the property of the ſaid Thomas Dunham Whitaker.

JOHN TATE.

Sworn before
J. HARGREAVE.

THIS is to certify that I, Thomas Clark, of Keſwick, nurſeryman, did plant for Mr. Gaitſkell, at Little Braithwait, in the county of Cumberland, forty-three thouſand three hundred Larch Firs, upon fifteen acres of high land, between the firſt of February and the firſt of April 1791. The above trees were all tranſplanted from twelve to twenty-four inches high; the ground is well fenced with ſtone walls, and quick-

fence

fence, with a deep ditch on one ſide. It was formerly all covered with whins, which were rooted up, and the land prepared and ſown with peaſe and turneps: being a dry hazel mould, it was in excellent condition for planting.

The plantation is at this time in the moſt flouriſhing ſtate, and promiſes to be a valuable concern to the owner; the trees being from three to ſeven feet high, and, from the great attention and care taken of them, will in a few years be an additional beauty to the county. Clearing the fern and briars, which the ground much abounded with, has been found indiſpenſibly neceſſary ſince planting.

THOMAS CLARK, Nurſeryman.
ISAAC DENTON, Vicar of Croſthwaite.
JONᴿ. YOUNGHUSBAND,
ROBERT HOGG, } Churchwardens.

Keſwick, 2 Dec. 1793.

The Society having, in conſequence of ſome applications from the Baſket-makers in London, offered Rewards for planting OSIERS, received ſeveral claims this Seſſion; and adjudged the firſt Premium, TWENTY POUNDS, to Mr. THOMAS RODD, of Waltham St. Lawrence, Berks; and the ſecond Premium, TEN POUNDS, to Mr. THOMAS WHITE, of Chriſtmas-ſtreet, Briſtol; from whom the following Accounts were received.

And the Thanks of the Society were given to Mr. WILLIAM BIGGS, of Rumſey, Hants, for his communication relative to his mode of planting OSIERS in Peat Lands, deſcribed in his annexed Letter.

SIR,

HAVING received a printed Paper relative to a Premium offered by the Society for the encouragement of Arts, Manufactures, and Commerce, for the cultivation of

of Oſiers; * I was induced to plant a few more acres than I at firſt intended this year. I have accordingly the honour to encloſe a certificate of nine acres and a half planted with foot-ſets; five of them, or rather better, are plain dug, and contain about twenty thouſand plants to the acre; the reſt lie in trenches, and contain fourteen thouſand or upwards. I have the ſatisfaction to think that not twenty plants ſeem to have miſſed throughout the whole.

I ſhall here beg leave to obſerve that one cannot be too early in planting after Chriſtmas is turned; the ſets having thereby the benefit of the firſt growing weather in March and April, and being in little danger of failing, which is not the caſe when they are planted ſo late as the latter end of April, or beginning of May: ſeveral acres failed on that account the year before laſt, though

* This alludes to a paper printed by order of the Society, and circulated through the kingdom, to give notice of ſuch premium being offered.

though I was fortunate enough to eſcape any material damage myſelf.

I have endeavoured to procure an eſtimate of the expence attending an Oſier ground, as it might be ſatisfactory to the Society, and of ſome uſe to thoſe who cultivate them.

Expences of one Acre and a half of Oſiers, having fourſcore Boults (of forty-two inches girt) to the Acre.

	£.		
Weeding twice, or weeding and hoeing,	1	10	0
Cutting, 2s. 6d. per ſcore,	0	15	0
Bringing to the pit,	0	6	0
Sorting, 2s. 6d. per ſcore,	0	15	0
Pilling, per load,	0	2	6
Whiting or ſtripping per load, all expences,	2	2	0
Binding, per load, for London,	0	7	0
Carriage by water from Maidenhead, 3s. 6d. per ſcore,	0	14	0
Carried forwards	6	11	6

Brought over				6	11	6
Rent, from one guinea to one pound ten ſhillings; medium, one pound five ſhillings	1	17	6			
Tythe,	0	3	9			
Carriage to the road, waggon, or water-ſide,	0	10	0			
				2	11	3
				9	2	9

A team of horſes will draw about ſeventy boults green, and about a load and a half whited, oſiers.

Not to treſpaſs longer on your time, I ſhall, Sir, only remark that ſome of theſe charges are local, and others belong only to the whitening. Six ſcore boults of green, or fourſcore

fourſcore boults of white, generally make a load.

I am, SIR,

Your moſt obedient,

humble ſervant,

THOMAS RODD.

Waltham St. Lawrence,
24 June, 1793.

Mr. MORE,

THIS is to certify that Mr. Thomas Rodd, of Waltham St. Lawrence, in Berkſhire, planted, before the 12th of April 1793, nine acres and a half of thoſe kind of Willows, commonly called by the name of Oſiers, Spaniard, and New Kind, fit for the purpoſe of Baſket-makers, and that there are above twelve thouſand plants to each acre, and that the plants are now in a thriving ſtate:

	A.	R.	P.
Gunneſbrook	5	0	31
Brandlings	3	3	17
Ameſhills	0	1	32
	9	2	0

PH. NIND, Vicar of Waltham St. Lawrence.
THOMAS GIBBONS, Surveyor.
JOHN FOSTER.
WILLIAM SHARP.

Waltham St. Lawrence,
24 June, 1793.

SIR,

I HAD not the honour of your letter till yeſterday, having been abſent from home. As near as I can recollect, I began planting about the 20th of January; but I cannot be particular as to the very day, as it is a time of year when I am generally on a viſit to my friends in another county. I believe I obſerved in my former letter to you, that ſoon after Chriſtmas is a good time to plant,

and

and to keep on till March: April, and May, I think rather too late, or at leaſt after the middle of April.

My plantations of this year are totally different from thoſe of 1791 and 1792, (which I had before ſent you an account of), and, excepting about half an acre, not in the ſame grounds; I have now upwards of nineteen acres in all.

I am reſpectfully,

SIR,

Your obedient humble ſervant,

THOMAS RODD.

Waltham St. Lawrence,
18 *December*, 1793.

Mr. MORE.

SIR,

ANNEXED is a certificate of my having planted nine acres of ground with Withys, in the pariſh of Chew Magna. I

began planting the 28th of January laſt; the plants conſiſted of Oſier, Brown Rod, Spaniard, and New Kind.

I am, SIR,

Your humble ſervant,

THOMAS WHITE.

Briſtol, 22d Nov. 1793.

Mr. MORE.

WE, the Miniſter and Churchwardens of the pariſh of Chew Magna, in the county of Somerſet, do certify that Mr. Thomas White, of the city of Briſtol, Baſket-maker, has planted, in our ſaid pariſh of Chew Magna, nine acres with Withys; and that the ſame are in a flouriſhing ſtate; as witneſs our hands, this 18th day of January, 1794.

JOHN HALL, Vicar of Chew Magna.
CHARLES WEAVER, } Churchwardens.
SAMUEL TAYLOR, }

SIR,

SIR,

I HAVE about ſix acres of Peat Land, in which, as I dig out the Peat, and level it, I plant Oſiers. I had about three acres in Oſiers this year, which produced four hundred and ninety Boults fit for baſkets, &c. and thirty-four Boults of fine one-year plants for ſetting: I believe I cut double the quantity of any of my neighbours from the ſame quantity of land, and think the reaſon is, putting the top-ſpit of the high, on the ſurface of the low, ground; this prevents its being over-run with ſpear and ſedge, which eats out the ground, and choaks the rods. I put my rows a yard aſunder, and the plants about ſixteen or eighteen inches diſtant in the rows: the being of that width allows room to weed them with a ſhort ſcythe, which cleans the plants better, quicker, and cloſer than a reap-hook, and not ſo liable to hurt the plants as by the frequent chopping with the hook. Some of my neighbours, on ſeeing my bed

proſper

proſper, are getting into the ſame method.

I am, SIR,

Your moſt humble ſervant,

WILLIAM BIGGS.

Rumſey,
December 8, 1793.

Mr. MORE.

The GOLD MEDAL was this Seſſion adjudged to GEORGE NELTHORPE, of Lynford-Hall, Norfolk, Eſq. for having planted, in the year 1790, thirty-five thouſand Alders, as appears by the following Letters and Certificates.

SIR,

BEING deſirous to obtain the honorary Premium offered by the Society for the Encouragement of Arts, Manufactures, and Commerce, for the improvement of planting; I have encloſed a Certificate, which I beg to have the honour to lay before them for their approbation.

I am, SIR,

Your obedient humble ſervant,

GEORGE NELTHORPE.

Lynford Hall, Brandon, Norfolk,
December 27, 1793.

Mr. MORE.

THIS

THIS is to certify that George Nelthorpe, of Lynford Hall, in the county of Norfolk, Eſq. had thirty-five thouſand Alders planted upon his eſtate at Igborowe, containing twelve acres, in the year 1790; and that upon a view, three days from this date, the plants were all in a thriving ſtate and good condition, and well fenced in every part, intermixed with more than two thouſand Aſh-plants and fifteen thouſand Oſiers, which ſurround the Alders.

JOHN PARTRIDGE, Miniſter of Igborowe.

SAMUEL FULLER, Churchwarden of Buckenham.

JAMES FIFE, Steward, who planted the above.

December 26, 1793.

The GOLD MEDAL, being the firſt Premium offered for planting Aſh in the year 1790, was this Seſſion adjudged to LEWIS MAJENDIE, of Hedingham-Caſtle, Eſq. and the ſecond Premium, the SILVER MEDAL, to HENRY GODFREY FAUSSET, of Heppington, near Canterbury, Eſq. in conſequence of the following Accounts and Certificates received from thoſe Candidates.

SIR,

THE encloſed certificates are tranſmitted to you for the inſpection of the Society for the Encouragement of Arts, Manufactures, and Commerce; they relate to a plantation of Aſh formed by me, at the cloſe of the year 1790, for the purpoſe of raiſing timber and underwood of this tree.

I ſhall decline all obſervation upon the various uſes of the Aſh; they are ſo univerſally

ſally known and underſtood, that the ſubject is exhauſted; therefore I ſhall confine myſelf to a detail of the methods purſued by me, in preparing and managing the plantation.

The quantity of land planted is ſeven acres and twenty-one poles; the ſoil for the moſt part loamy; the reſt, a clay. Near three acres were deeply trenched; the remainder and larger part was ploughed as deep as, with a ſtrong plough and four horſes, could be effected. This, however, is a practice I do not at preſent approve, having found it, by experience, greatly inferior to the former mode of preparation for planting.

The trees were ſtrait and well grown, from four to five years old, planted at intervals of four feet, and in number ſomewhat exceeded nineteen thouſand.

It being my wiſh upon this occaſion to form a plantation of timber and underwood; it became neceſſary, about two years after the trees were planted, to ſelect ſuch

as, during the above period, had aſſumed the moſt promiſing appearance, ſo as to become ſtrait and uſeful timbers: accordingly, at the commencement of the preſent year 1793, a ſuitable number (exceeding one hundred upon each acre) were ſet out for this purpoſe at intervals, requiſite to enſure their future ſucceſsful timber growths; the reſt of the trees being intended for underwood.

The trees, which have now been planted three years, are in a moſt healthy thriving ſtate, as well as ſecurely fenced. The ſucceſs which has attended my exertions on this occaſion, has given me great ſatisfaction. The approbation of your highly uſeful Society will render this complete.

I have the honour to be,

SIR,

Your moſt obedient humble ſervant,

LEWIS MAJENDIE.

Hedingham Caſtle, Eſſex,
Dec. 31. 1793.

Mr. MORE.

THIS

THIS is to certify, that, in the months of November and December 1790, I, with proper aſſiſtants, planted for Lewis Majendie, of Hedingham Caſtle, in the county of Eſſex, Eſq. ſeven acres and twenty-one poles, with nineteen thouſand Aſh-trees, for the purpoſe of raiſing timber and underwood upon the Caſtle eſtate.

The trees were from four to five years old, and were planted in rows at intervals of four feet. Two acres, three roods, and one pole of the land, were double dug; and the remaining four acres, one rood, and twenty poles, were ploughed as deep as poſſible with a ſtrong plough and four horſes, before the trees were planted.

The trees intended for timber are ſet out at proper diſtances, to encourage their free growth; and in number exceed one hundred to each acre.

The whole is ſecurely fenced, and at this time (which is three years ſince the plan-

tation was made) the trees have a very healthy and promiſing appearance.

JAMES MONTGOMERY,
Gardener to Lewis Majendie, Eſq.

Hedingham Caſtle,
Dec. 20, 1793.

I JOHN STORER, of Halſted, in the county of Eſſex, land-ſurveyor, do hereby certify that I meaſured three pieces of land in the pariſh of Caſtle-Hedingham, planted with Aſh trees for timber and underwood, by order of Lewis Majendie, Eſq. and that they contain ſeven acres and twenty-one poles.

Halſted,
Dec. 20, 1793. JOHN STORER.

WE, the Miniſter and Churchwardens of the pariſh of Caſtle-Hedingham, in the county of Eſſex, hereby certify, that we have at different times viewed the plantations

tations of Aſh alluded to in the above certificates, and that we believe the facts contained in them to be ſtrictly true.

GEORGE CASWALL, Curate of the pariſh of Caſtle-Hedingham.

BAKER MYALL, Churchwarden.

Caſtle-Hedingham, Dec. 20. 1793.

AN account of a plantation of Aſh intermixed with Willow, made in the ſpring of 1790, in the pariſh of Lower Hardreſs, in the county of Kent, by Henry Godfrey Fauſſet, Eſq.

Number of Acres planted.

	A.	R.
No. 1. contains	4	2
No. 2.	3	2
Total of acres planted	8	0

Soil.

Soil.

Of both cloſes, nearly alike; a ſtiffiſh gravelly clay, intermixed with flints, and very poor.

Situation and Expoſure.

Both on very high ground. No. 1, nearly flat, and entirely ſurrounded by wood. No. 2. ſheltered on three ſides by plantations; but open to the north-eaſt, to which it gently ſlopes.

Previous Management.

No. 1. a clean pea ſtubble, once ploughed in December, 1789. No. 2. fallowed in the preceding ſummer.

Sorts of Plants.

Aſh Plants, from one foot to one foot and a half high; Willows, one year old from the cutting, and of that ſort called the Scoth Willow.

Method of Planting.

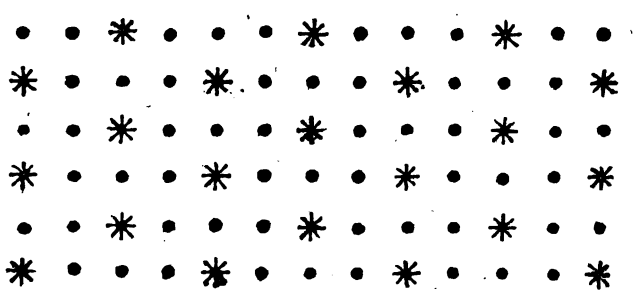
They were planted at the diſtance of three feet and a half in the proportion of three

three Willows to one Aſh, and in ſuch a form that on the decay of the Willows, (which are not ſuppoſed to be of long duration) the Aſh plants will remain ſeven feet aſunder.

Number of each ſort planted.

Aſh plants, per acre	964
Willows	2892
Total per acre	3856

For the better explaining the above method of planting, the following plan is given: ſcale, 14 feet to an inch.



N. B. The ſtars denote the Aſh, and the dots the Willow plant.

Cultivation

Cultivation and preſent State.

The ground between the plants was worked in the ſpring and ſummer, till the Willows got too high, with a ſmall plough and a horſe hoe; and in the winter, when the Willows are cut down, every plant is dug round with a ſtrong ſpade.

The Willows are annually cut off cloſe to the ground in the winter, and ſold to the Baſket-makers.

The Aſh plants have never yet been cut.

In No. 1. the Aſh and Willow plants are in a very flouriſhing ſtate; the former being from four to ſix and ſeven feet, and the latter from ſix to ſeven and ten feet in height.

In No. 2. the plants do not put on ſo promiſing an appearance, but are at preſent unthriving.

OBSERVATIONS.

The advantages ariſing from this method of making plantations of Aſh, are very

very great. The Aſh, when young, requires conſtant cultivation, and for want of it will be ſtinted in its growth, and often remains for twenty years without making any progreſs: it is likewiſe brought much more forward, when ſheltered by other plants. By this method, ſhelter and cultivation are united; the Willows ſerve as excellent nurſes, and, by the profit they yield, more than pay for the neceſſary culture of the ground; and, being annually cut down, are very far from injuring the Aſh plants by their ſhade, or cauſing them to form weak ſhoots; on the contrary, they are remarkably ſtout and healthy. Theſe Willows are not of long duration, and will in the courſe of fifteen or ſixteen years entirely decay; but they will by that time have performed their office. The Aſh plants will then be left at a proper diſtance, of ſufficient ſtrength to take care of themſelves, and will at that time require the whole ground.

The difference of the ſucceſs of the two plantations may be thus accounted for:

No. 1, though not fallowed, was tolerably clear from weeds; and was freſh land, being but very lately broken up from a ſainfoin ley, and well ſheltered.

No. 2. was fallowed, but had been previouſly exhauſted by cropping, and is expoſed to the north-eaſt wind: the plants, notwithſtanding, looked well till late in the ſpring of 1792, when the Aſh plants loſt their young ſhoots by a ſevere wind and froſt, which did conſiderable damage in this part of the country; hedges and trees expoſed to the north-eaſt, not recovering their verdure till Midſummer. The other plantation, by being more ſheltered, eſcaped; but a more ſerious miſchief was lurking in the ground, which was very full of the grub of the cockchafer; the conſequence of which was, that the plants, by having the bark and fibres of their roots preyed on by thoſe deſtructive inſects, made little or no ſhoots, and thoſe but weak: ſome were entirely, killed, and have ſince been replaced.

The plantation now looks rather more promiſing than it did; and, as the grubs have now laid themſelves up in the aurelia ſtate, it is hoped it will recover.

I RICHARD ANDREWS, of Challock, in the county of Kent, nurſeryman, do hereby certify that I planted for Mr. Fauſſet, of Heppington, eight acres of ground, in the ſpring of the year 1790, with Aſh intermixed with the Scotch brown Oſier Willow, each acre containing nine hundred and ſixty-four Aſh plants, and two thouſand eight hundred and ninety-two Willows; and that I have this day viewed the plantations, and find that the plants in one piece, which contains four acres and a half, are in the moſt thriving ſtate, the Aſh being from four to ſix and ſeven feet, and the Willows being, of one years growth only, from ſeven to ten feet in height; that in the other piece, of three acres and a half, the plants are not ſo thriving, their roots having been barked by the grubs; but they now ſeem recovering.

Dec. 17, 1793. RICHARD ANDREWS.

WE, the underwritten, do hereby certify that the annexed papers contain a juſt and true account of the plantations therein mentioned, according to the beſt of our information and belief; and that we have on this day viewed the ſame, and found in No. 1. the Aſh and Willow plants in a very flouriſhing ſtate, the former being from four to ſix and ſeven feet high, and the latter from ſix to ſeven and ten feet in height; that in No. 2. the plants do not put on ſo promiſing an appearance, but are at preſent unthriving; that the plantations are ſecured by fences.

WILLIAM HONYWOOD, Sibton.
JAMES TILLARD, Street-end Houſe.
THOMAS RANDOLPH PELHAM.
HENRY THOMSON, Rector of Lower Hardreſs.

Dec. 19. 1793.

The

The GOLD MEDAL, being the Premium offered for mixed TIMBER-TREES, planted between the firſt of October, 1789, and the firſt of May, 1791, was this Seſſion adjudged to the Rev. CHARLES HOPE, of Derby, from whom the following Accounts and Certificates were received.

SIR,

HAVING for many years been peculiarly fond of raiſing and planting foreſt-trees, I was induced, by the allotment to me of a conſiderable quantity of common land in two encloſures, which have lately taken place in the chapelry of Bradfield, in the county of York, to indulge myſelf in this favourite amuſement, and to try the cheapeſt and moſt effectual method of making plantations of mixed Timber-trees, upon rough ſtony land, that would not anſwer ridding and making arable;

and as the Society for the Encouragement of Arts, Manufactures, and Commerce, hold out flattering propoſals for promoting ſuch plantations, I beg leave, through you, to lay before them the reſult of my experiments.

My reſidence being at Derby, full forty miles diſtant, I began at firſt to prepare a nurſery for the young ſeedlings, near the lands I intended to plant, while my ſtone fences were making; but I could not ſucceed at that diſtance in my endeavours to have the plants kept clean from weeds, and was diſappointed in my expectations of their growth, when I went over to form the plantation, as the country near the Moor edge is very cold and bleak.

I found likewiſe that the carriage from hence of what trees I trained here to three or four years old was very heavy, and that the making holes with a ſpade for the luxuriant plants of that age was very tedious and expenſive; as the land was full of ſtones on the ſurface in many places, from a foot

ſquare to a much larger ſize, though the ſoil was rich and good in the interſtices. I therefore determined to plant every ſort from the ſeed-bed, raiſed on good ground under my own eye.

I ſowed Acorns, Beech Maſt, Spaniſh Cheſnuts, Sycamore, and broad-leaved Elm-ſeed; Larch and Scotch Fir. The ſoil being rich, the Oaks at two years were from ſix to twelve inches high; the Aſh, from the time of their appearing, nearly the ſame; the Beech and Cheſnut, from four to eight inches; the Sycamore and Elm, at one year, from twelve to eighteen inches; the Larch, at two years, from eight to eighteen inches; and the Scotch Fir, of two years, picked out, from four to ſeven inches: in drawing theſe ſeverally from the ſeed bed, I muſt obſerve that all under the above ſizes I had ſorted out, and ſet in rows for the next year's planting: after binding up ſuch as were fit to make uſe of in hundreds, and packing them in mats, I ſent them by the waggon to Sheffield, at eighteen pence per hundred

weight. The largeſt quantity I ever ſent was forty thouſand, which weighed eleven hundred weight.

The roots in general, from their growing cloſe in the ſeed-bed, did not want much trimming, except of the matted parts: they had ſtruck downward, and were ſo much of the tap-kind, as to have been any of them planted with a ſetting ſtick in light ground. I therefore determined to make my holes with a pick inſtead of a ſpade; with the firſt ſtroke of which the ſod (whether of turf or moſs) was removed, and by the ſecond a hole was made of ſufficient depth for the plant: if a ſmall ſtone was hit upon, it was eaſily taken out, and the hole became more ample; if a larger preſented itſelf, or was ſtruck upon, the edge of it was ſought for on the right or left, and a plant inſerted as near the line as could be: a man or boy, with the plants in ſorts, followed the pick, put one into each hole; then, firſt inſerting the ſod, faſtened it and the ſoil with his foot. I did not meaſure the diſtance of each plant,

but

but ordered each row as near a yard aſunder as they could gueſs, and each hole in the row leſs diſtant than a yard. In this manner, with fourteen perſons, I have planted full ten thouſand trees in a day.

Upon the encloſure of the manor of Bolſterſtone, in the chapelry of Bradfield, I had among other parcels ten acres allotted me on Langley-Brook Common, which I got encloſed with a ſtone wall ſix feet high at leaſt, and planted about two acres in the above method in November, 1785. In the years 1786 and 1787 I completed the other eight acres, mixing promiſcuouſly Oak, Aſh, Spaniſh Cheſnuts, Elm, Beech, Sycamore, Larch, Scotch and Spruce Fir (of the laſt ſort the feweſt, as, in ſome former plantations I had made in the ſame country, I perceived theſe to die at the top at ten or twelve years old). In the moiſt places I added ſome Huntingdon Willows, Alder, and Poplars, the whole in the ten acres, amounting to upwards of forty-one thouſand.

My firſt two acres ſucceeded ſo well as to give me great encouragement; ſo that upon the encloſure of Wadſley and Worral, in 1787 (another diſtrict in the ſame pariſh), I requeſted the Commiſſioners to indulge me with ſome rough part of the Common, of which I expected a greater quantity, as it would not anſwer ridding and making arable; and no other proprietor ſeemed deſirous of planting any part of their allotments.

Here my allotment was forty-five acres, of which I fenced out thirty-two for planting: I completed ten acres of theſe in November, 1788; planted nine more in 1789, five in 1790, and the remainder in 1791 and 1792, filling up in theſe two laſt winters the vacancies made by ſuch as had not ſucceeded in the former planting.

The Common was called Middle Wood, and I doubt not had been formerly a wood of timber, there being the remains or ſtools of oak or birch wood, which had been at the

the mercy of all the land-holders of the diſtrict for hedge-wood, firing, &c. without controul, till the time of enclofing.

My firſt ſtep, therefore, was to cut all the bruſh-wood cloſe with a ſharp inſtrument, and to plant the firſt year the moſt bare places only, which ſaved me many plants the year following; for, as ſoon as the land was kept free from the ravages of cattle, the ſtools of the Birch ſhot, ſome as high as four feet the firſt year; and many Oak ſhoots made their appearance likewiſe, among which I planted five hundred Weymouth Pines of three years old, and which thrive amazingly under their ſhelter.

I will not take upon me to aſſert exactly the number of mixed trees planted in theſe forty-two acres. My gardener, who regularly went over with me in the planting ſeaſon, died laſt ſummer: he had kept an account to upwards of one hundred and fifty thouſand; but I have not his papers. We generally allowed four thouſand to an acre, and we ſet apart from five hundred

to one thouſand every year for filling up vacancies of the former year's planting.

As I planted my trees ſo young, I was ſenſible of the advantages of a bare common, cloſe eat with ſheep; and therefore always left an opening in the fences, till the very time I began to plant. The Scotch Fir, Cheſnut, and Beech, did not, however, grow ſo faſt the firſt and ſecond year in ſome places as the herbage; and on looking over ſome parts for vacancies, I thought I found ſo many as almoſt to determine me to replant many ſpaces; but in the third year I perceived ſhoots of three, four, and five inches, from plants I could before ſcarcely perceive; and the herbage, which I thought had ſmothered them, ſeemed only to have afforded ſhelter, and to make them ſhoot afterwards with more vigour.

Of the trees I have planted, the greateſt number are Oak, Larch, Aſh, and Scotch Fir; the latter in the moſt rocky parts. The Larch, of all, is my favourite; it not only outgrows every other tree, and that in the moſt expoſed ſituations, but I have reaſon

to

to think it a moſt valuable wood, and will be taken out (as it grows) without damaging thoſe near it, which it has been the means of training ſtrait.

Some of thoſe I planted in 1785 are many of them above twenty feet high; and the year before laſt, I was obliged to employ a perſon to trim them up, as they obſtructed a foot way which lay through the allotment; and I purpoſe next year to cut down numbers for ſtakes and rails. The Spaniſh Cheſnut and Beech too improve wonderfully, in proportion as they become more ſheltered.

The expence of walling the forty-two acres was ſeventy-eight pounds twelve ſhillings: it would have been much more, but that the ſtone for it was got in the land, and the carriage thereof trifling. The ſeeds, carriage, wages of planters, &c. did not amount to fifty pounds by theaccount I have kept, ſo that the average is about three pounds per acre: this, conſidering the roughneſs and declivity of the land, which never

never could have anſwered the attempt of ridding, ſeems to afford a rational proſpect of future private advantage as well as public utility. It ſeems to point out the beſt uſe to which many thouſand of acres of ſimilar land, now encloſing, can be applied; and, as theſe plantations thrive ſo well, I hope other proprietors may be induced to follow the example.

The advantage of planting trees from the ſeed-bed will ſoon manifeſt itſelf, from the cheapneſs both in raiſing and planting them in this method, as well as from their ſucceeding ſo much better than in many other attempts in that neighbourhood; which conſiſt of plants one or two feet high, bought at a conſiderable expence from the nurſeryman, and which are retarded much, in ſuch an expoſed open country, both by the ſun and winds, in their early growth.

For myſelf I can only ſay, I am ſo ſatisfied with the promiſing and thriving ſtate of theſe plantations, made in the manner above deſcribed (and for the truth of which

I ſend

I ſend you the beſt certificates I am able), that, in a freſh encloſure, now ſtaking out in the ſame pariſh, and where my allotment is upwards of ſeventy acres, I propoſe making a freſh attempt, having begun to raiſe a quantity of ſeedlings; and, if I live a few years, mean to plant at leaſt two thirds of this land in the ſame manner.

I am, with great reſpect,

SIR,

Your very obedient humble ſervant,

CHARLES HOPE.

Derby, Oct. 12, 1793.

Mr. MORE.

I BENJAMIN HOBSON, of Worral, near Sheffield, tenant to the Rev. Charles Hope, of Derby, and overlooker of his eſtates in the chapelry of Bradfield, in the county of York, do hereby certify that I have attended and aſſiſted him in making divers

divers plantations during the laſt twenty years, and particularly in the lands allotted to him in the laſt encloſures of Bolſterſtone and Worral; that the quantity of common land fenced and planted at Langley Brook, in the manor of Bolſterſtone, and begun in 1785, was, according to the award, ten acres and upwards; and that at Worral, thirty-two acres in four ſeparate encloſures; the firſt was begun in November 1787, and the laſt finiſhed in November 1792; that the whole was completed by my direction and labour, with his late gardener and aſſiſtants, making the rows about three feet aſunder, and the diſtance of each plant from two to three feet; that the vacancies on looking over, were generally filled up every year, and that all the plantations are well finiſhed, and now in a moſt thriving ſtate, the ſame growing ſo thrivingly and thick as not eaſily to be paſſed through already.

BENJAMIN HOBSON, of Worral.

Sept. 28, 1793.

I HEREBY certify, that, at the requeſt of Mr. B. Hobſon, of Worral, I viewed, September 18, 1793, the ſeveral plantations of the Rev. C. Hope, on the new encloſures of Worral, finiſhed laſt year; that the contents of the whole are thirty-two acres at leaſt; that they are well fenced, and the plants in a moſt thriving condition, ſo as to promiſe the appearance of a compact wood in a few years.

JAMES MORTON, Churchwarden of Bradfield.

BEING requeſted to viſit and look over the plantations of mixed Timber-Trees, made a few years ago by the Rev. Charles Hope, at Langley Brook, in the lordſhip of Bolſterſtone; I hereby certify that they, to the amount of ten acres, are well fenced, and in the moſt thriving ſtate; ſome of the Larches and Firs firſt planted there being twenty feet high, and ſome parts requiring to be pruned.

As witneſs my hand,

THOMAS BLAND, Curate of Bolſterſtone, in the chapelry of Bradfield, county of York.

Sept. 20, 1793.

The Thanks of the Society were this Seſſion given to THOMAS SKIP DYOT BUCKNALL, Eſq. for the following Communications on PRUNING ORCHARDS, in addition to thoſe printed in the eleventh Volume of theſe Tranſactions, page 7—31.

SIR,

I HAVE been twice this ſummer to view the Orchards at Sittingborne, and deſire the favour of you to acquaint the Society for the Encouragement of Arts, Manufactures, and Commerce, that, to fulfil the promiſe conveyed in the memorial I did myſelf the honour of preſenting to them, I now ſend further obſervations to throw the huſbandry of Orchards under ſuch culture as to preſerve the tree, and improve the fruit.

The appearances were much to my ſatisfaction, and I ſaw great reaſon to be pleaſed with

with the operation of pruning; yet ſeveral of the cherries were much gummed. I examined to ſee whether the gum was from freſh fiſſures, or thoſe formerly medicated; and to a certainty the former medications were perfectly healed; and I did not obſerve, but that the cherry bears the knife very well, with the aid of the medication. I pointed out theſe circumſtances to the tenants; and deſired they would look to them, and open the blotches which had affected the trees ſince pruning.

Mr. R. and I. Boulding informed me that the medication had been objected to, on account of the tar. I ſhould not have thought this of conſequence ſufficient to mention to the Society, if it had not been repreſented by William Pattenſon, Eſq. in a paper publiſhed in the XIth Volume of their Tranſactions, that to ſmear the ſtems of trees with tar, to keep cattle from biting them, is injurious: certainly, in the ſenſe there conveyed, the obſervation is perfectly right; and to explain the difference, I muſt

beg

beg the indulgence of the Society; for to ſuffer any doubt to remain either in the ſcience or practice, would entirely deſtroy the whole ſyſtem.

THE FORMATION OF GUM.

From the ſtems and leaves of trees a conſtant and copious evaporation is regularly going on, as may be proved by the air-pump. Now any ſudden check ſtriking the tree ſtops the pores, and obſtructing the perſpiration throws all the ſap into diſorder; which ſoon becoming vitiated, and nature having no other way of relieving itſelf, forces a fiſſure through the bark, out of which oozes the almoſt ſtagnated ſap, which, there condenſing, becomes gum very ſoon; after which the bark, wanting its due portion of nouriſhment, begins to crack and ſplit: from that time the tree runs faſt into ruin.

Therefore any ſmearing, or other cauſe which may impede a juſt circulation and perſpiration, muſt injure the tree; but the medication

medication cannot produce any of theſe evils; for it is applied merely as a plaſter, and is never extended further than on the bare wood, or torn bark, and where the gum is oozing through the bark. I deſire to aſſure the Society that in each of theſe caſes, the medication, from its drying qualities, becomes ſupremely ſalutary, and the wounds heal in half the time they can do when expoſed to heat, cold, moiſture, and vermin: for the misfortune is, being left expoſed, the wounds do not heal; there the evil lays.

Mr. Boulding, in his certificate, ſays, "When we took off a large branch or two, "the wounds generally cankered; which "made us leave them in the encumbered "ſtate they were in, rather than run any "hazard."

Mr. Lake alſo remarked, "Many died; "others were wounded by a canker in the "bark, from the bottom of the body to "the top arms." Mr. Fauſſet ſays, "I ap-"priſed Mr. Bucknall that his orchards

" in the occupation of Mrs. Boulding were " in a very declining ſtate; and, in au- " tumn 1789, having buſineſs with him, I " again repeated my thoughts relative " thereto; and that, if ſomething was not " done to recover the trees, I ſuſpected that " great part, if not all of them, would cer- " tainly die. He (Mr. Bucknall) ſaid he " could eaſily reinſtate the trees and bring " them to health, and would come down " for that purpoſe, and be anſwerable the " trees ſhould not ſuſtain any injury; and he " did come down in the ſpring following."

My agent Mr. Fauſſet, the tenants, Mr. Lake and the Bouldings, all concur in ſaying that the trees were in an actual ſtate of decay (ſee Vol. XI). This is a circumſtance neceſſary to be fully eſtabliſhed, as any one may ſee they did recover and wonderfully. This induces me to ſay that from the certainty of ſucceſs and eaſy application, the medication ſurpaſſes any thing for ſuch pruning as Orchards require. Where trees have been ſo long neglected as to become hollow

hollow, I would recommend the compoſition prepared by Mr. Forſyth, becauſe the hollow parts require a ſubſtance to fill them up; and I have the happineſs of ſaying that Mr. Forſyth and I go on the ſame principle; each planning for the general good of ſociety, and the improvement of art.

And, as I have long wiſhed to introduce the name of orchardiſt, I here deſire it may take place; and for the encouragement of thoſe who are willing to undertake the art, ſay that it is eaſily learnt and highly pleaſurable; for what can be a greater gratification, than to ſee nature improving under our hands?

It is a miſtake to cut off the heads of trees, and engraft them, merely to procure young wood; pruning being better, as an old tree cannot continue in health after ſuch loppings; for the head being gone, the roots become inactive, and more miſchief takes place out of ſight than can be repaired in years. Do not attempt to force a tree higher than it is diſpoſed to grow, for that will not improve the fruit: the rule ſhould be—keep the branches out of the reach of

cattle, then let them follow their natural growth; for each different ſpecies of the apple and other fruits have a growth peculiar to themſelves. With regard to general pruning, do it as ſoon as the fruit is off, that the wounds may tend toward healing before the froſt comes on; but do not ſuffer a broken or decayed branch to continue at any ſeaſon.

If I may make uſe of an exploded idea, the ſubſtantial form of the tree is the ſame before and after pruning; that is, the tree continues of the ſame ſize, and all extreme ſhoots keep the ſame diſtance, which is an improvement no one has brought into practice; for each perſon employs his ſtrength to knock the heads of the trees to pieces, mutilating them, till he leaves the tree in a more decaying ſtate than when he firſt attempted the pruning it. Having ſpoken thus freely, I muſt, in juſtice to the age, ſay, there are few profeſſional men who are not expert at wall-fruit pruning; becauſe, it being their profeſſion, they attend to what they are about.

HINTS ON PLANTING.

The prevention of a diſeaſe is preferable to the cure; therefore, if poſſible, chooſe the trees the year before they are to be planted, and ſee that they are properly pruned in the nurſery, by taking off, perfectly cloſe, all rambling and unſightly branches, leaving the heads to three or four good leading ſhoots; from this forecaſt the trees will not require pruning for ſome time, and, having no wounds to heal the year they are tranſplanted, will greatly accelerate their growth. Be ſure the trees are young; and do not plant any galled, fretted, or cankered plants; for it is certain that there is a vapour ariſes from cankered trees which affects the ſound ones.

When the trees are taken up, keep the roots as long as is convenient, which will give them a diſpoſition to run horizontally, from which, the roots being more under the influence of the ſun, the ſap is richer, and produces the ſweeteſt, faireſt fruit;

prepare ſtakes before the day of planting, for the trees muſt be well ſtaked and defended from cattle; and other precautions with which the planters are well acquainted.

Chooſe your ground carefully, that your plantation may be ſcreened on the eaſt, north, and weſt ſides, and open to the ſouth: and tell the nurſeryman that he muſt attend to the natural growth of the different fruits, and mark them, that they may be planted thus—one row of the talleſt ſtrongeſt growers on the three cold ſides, and that row ſhould be planted twice as thick as any other; then one row more of the next free-growers parallel to the laſt rows; and ſo go on gradually, declining in ſize till you come to the centre.

What I mean by twice as thick, place a low rambling growing fruit-tree between each of the other; for the intention here is to raiſe ſhelter; and it would be adviſeable on the outſide of the plantation to run a row of underwood, more than a pole wide of the freeſt growing trees which the country

produces;

produces; be aſſured the wood will more than pay for the expence. Be not tenacious of the ſize or ſhape of the Orchard; for, in ſome ſituations, by taking a little more or leſs ground, much good may reſult. Before the ground is laid out, let the mind be active to ſecure the little riſings or inflections, to catch the ſun, and exclude the cold. The Scotch Fir, or other valuable trees, may be happily introduced at a diſtance for ſhelter, and which would alſo greatly embelliſh the appearance of the country.

Such a plantation may be expected often to bear a crop when the whole neighbourhood fails; and every one knows the value of a good crop in a failing year. Theſe ideas are on a large ſcale, for the ſupply of the London markets: and, though I can bring no proof that ſuch an Orchard exiſts, the hints here given are to point out that poſition is an eſſential circumſtance both for the whole plantation and every individual tree. Always remembering local circumſtances muſt govern the buſineſs: Follow nature.

If I have expreſſed this clearly, the Orchard will appear as it were encloſed on three ſides; the larger trees are to keep off the blighting winds; and leaving the plantation open in the middle and to the ſouth, is to diſſipate the ſtagnant vapours which ſtunt the fruits in the ſpring; beſides, the ground being open in the middle, the verdure or crop under the trees will be more valuable: this mode of planting will alſo appear handſome, and each tree enjoy the happieſt influence of the ſun and air. The cuſtom of intermixing fruits by chance is always unſightly and detrimental; for the ſtrong growers conſtantly ſtunt and ſpoil the more delicate fruits by overtopping them; whereas by this mode the delicate fruits fall to the centre and ſouth.

In new plantations be careful not to place the trees too deep; more miſchief ariſes from that one ſource than all the other combined cauſes: but when the trees are too deep, a method may be introduced for raiſing them, or for ſetting them upright when they lean, alſo for making the barren

trees

trees fruitful, provided they are in high health; if not, the ſooner they are grubbed up the better. Alſo avoid planting too thick, for ſunſhine and ſhade are unalterably the cauſe of ſweet and ſour fruits.

I have been careful in expreſſing the manual operations in a plain and ſhort manner, that the practice might appear eaſy. As for the natural and philoſophical accounts of the bark, the formation of gum, the power of vapour, &c. with the relative cauſes of decay in vegetation, I have entered more fully into them, in hopes of inducing gentlemen to take up the practice, and eſtabliſh the profeſſion of an Orchardiſt.

Laſtly, I beg the Society not to deem any of theſe circumſtances viſionary; for I have ſo long dwelt upon the ſubject as to be fully perſuaded of the efficacy of the whole practice, and that it may be rationully expected from judicious pruning, that the crooked trees may be made ſtrait, the ſterile fruitful, and the old handſome; as the power of nature may thereby be regenerated, the diſeaſe removed, all the branches ſup-

plied with young and bearing wood; ſo that we may almoſt ſay the cauſes of decay are baniſhed: but to ſupport theſe aſſertions, the trees ought from their earlieſt infancy to be in good hands, and regular pruning introduced.

I am, SIR,

Your moſt obliged humble ſervant,

THOMAS SKIP DYOT BUCKNALL.

Hampton Court,
15 Nov. 1793.

Mr. MORE.

Orchardiſt's Tools recommended by Mr. Bucknall.

Two Pruning-Knives, a Saw, two Chiſſels, a Mallet, a Spoke-ſhave, and a Painter's Bruſh. With the chiſſels and ſpoke-ſhave work upwards, or the bark will ſhiver: the ſaw muſt be coarſe ſet, all the other tools ſharp and ſmooth; and to ſhew the ſize and form of the pruning-knives, three are reſerved in the Society's Repoſitory, for the inſpection of the Public.

The

The GOLD MEDAL, or the SILVER MEDAL and TWENTY GUINEAS, being the Premium offered for the beſt comparative Account of the CULTURE of WHEAT, by ſowing it broad-caſt, or by drilling it in equidiſtant rows, hoeing the intervals, was this Seſſion adjudged to Mr. PETER SMITH, of Hornchurch, Eſſex, who made choice of the SILVER MEDAL and pecuniary Reward.

SIR,

FINDING the Premium for the Comparative Culture of Wheat ſtill continued by the Society for the Encouragement of Arts, Manufactures, and Commerce; I take the liberty of ſubmitting to their conſideration the following experiment, made on a twelve-acre piece, half drill and half ſown broad-caſt.

The

The land, a mixed ſoil or gravelly loam, was twice ploughed and three times harrowed, after a good crop of drilled Peas, as a preparation for Wheat; and, on the 10th of October 1792, ſix acres were drilled with Cooke's drill at nine inches intervals, with ſix pecks of ſeed per acre; the land being previouſly put on proper width for the drill of nine feet ſix inches. On the ſame day ſix acres were ſown broad-caſt with ten pecks of ſeed per acre. During the winter the plants of the broad-caſt appeared the beſt, and more promiſing for a crop than the drilled; but ſoon after the drilled were ſcarified, and harrowed acroſs with light harrows with wooden teeth made on purpoſe: it looked better, being of a darker green than the broad-caſt, and continued ſo until harveſt: the drilled was ſcarified and harrowed acroſs the firſt week in March, and repeated ſoon after; horſe-hoed the firſt week in April, at eight-pence per acre each proceſs; at which time the broad-caſt was hand-hoed at ſix ſhillings per acre; and the laſt week in April the drilled was hand-

hoed

hoed at three ſhillings and ſixpence per acre. Both crops were ſeparately harveſted in Auguſt, and laid in the ſame barn, but kept ſeparate by the drag-rakings and hurdles. In November and December both crops were ſeparately thraſhed by the ſame men; the produce as follows.

Drilled Wheat from ſix acres, 21 quarters 2 pecks, or, per acre, 28 buſhels, 2 quarts, 1 pint:——Straw, 12 loads 14 truſſes, of 36 pounds per truſs, and 36 truſſes to the load.

Broad-caſt Wheat from ſix acres, 17 quarters 5 buſhels, or, per acre, 23 buſhels 2 quarts:——Straw, 13 loads 23 truſſes.

N. B. The drilled ſtraw made two ſhillings a load more than the Broad-caſt in Smithfield Market, being clean from weeds, which on the average makes good the deficiency in quantity.

	£.	s.	d.	
Average advantage in favour of Drilling,	1	7	11	without fractions.
Saving of ſeed per Acre with the Drill,	0	6	0	
In favour of Drilling per Acre,	1	13	11	

In

In addition to the above comparative experiments in drilling and broad-caſting Wheat, I laſt year made the following comparative experiments in Barley and Oats. The laſt week in February 1793, I drilled three acres of Turnep-land with Barley at twelve-inch intervals, with two buſhels of ſeed per acre; it was ſcarified and harrowed acroſs the latter end of March, and horſe-hoed the ſecond week in April; ſame day ſowed the graſs ſeeds, which are now an excellent plant, far ſuperior to the broad-caſt.

The produce of the drilled Barley is 18 quarters 3 buſhels, from three acres.

On the ſame day I ſowed three acres broad-caſt in the ſame field, and in the ſame ſtate of cultivation, with three buſhels of ſeed per acre, and ſowed the graſs ſeeds the ſame day.

The produce of the three acres of broad-caſt Barley is, 15 quarters 4 buſhels from three acres.

About the ſame time, viz. the laſt week in February, I drilled two acres of Oats, and

ſowed

ſowed two acres broad-caſt, with three buſhels per acre drilled, and four buſhels per acre broad-caſt: the drilled Oats were twice ſcarified, and once horſe-hoed, and both drilled and broad-caſt hand-hoed, the drilled at three ſhillings per acre, and the broad-caſt at five ſhillings per acre.

The produce of the drilled, 12 quarters 4 buſhels:—ditto of the broad-caſt, 11 quarters 5 buſhels.

If the above ſtatement of particulars on Comparative Drilling and Broad-caſting ſhall be deemed by the Society to throw light on the ſubject, the circumſtance will confer the greateſt honour on,

SIR,

Your moſt obedient ſervant,

PETER SMITH.

Hornchurch, Eſſex,
Feb. 3, 1794.

Mr. MORE.

P. S. I have now been a practitioner in drilling three years; and in proportion as I im-

I improve in the knowledge and practice of the ſyſtem, I feel myſelf compelled to think more favourably of it. Laſt year I ſurpriſed my neighbours by making a clean fallow of an exceeding foul piece of land, by the uſe of Mr. Cooke's ſcarifiers and ſcuffiers; by which I ſaved two thirds of the expence of making fallows in the uſual way by ploughing and harrowing, the land being only once ploughed; the remainder of the buſineſs was done by ſcarifying and ſcuffling.

The

The following Accounts and Certificates, reſpecting the Growth and Cure of RHUBARB, having been received; the GOLD MEDAL, being the Premium offered for cultivating the greateſt number of Plants, was adjudged to Mr. WILLIAM HAYWARD, of Banbury, Oxfordſhire: and the GOLD MEDAL to Mr. JOHN BALL, of Williton, Somerſetſhire, for his method of curing that valuable Drug.

SIR,

WHEN I had the honour to addreſs the Society, in the year 1790, in reſpect to the culture and cure of Rhubarb, I mentioned an experiment I was then making of propagating that valuable drug by off-ſets taken from the crowns of large plants, inſtead of ſeeds, in hopes of being able to bring the Rhubarb to perfection in fewer years: I have now the ſatisfaction of

ſeeing my hopes realiſed, and beg the Society will do me the honour of accepting a ſmall ſpecimen (herewith ſent) produced as above mentioned, in the ſhort term of four years. I have taken up and cured, this laſt autumn, more than forty roots, very large, and of excellent quality. A very reſpectable Druggiſt, on examining a quantity of the beſt, aſſured me (if in his ſhop) he would not retail it under two ſhillings and ſixpence per ounce.

As I wiſh to give every aſſiſtance in my power to the plan which the Society ſo laudably encourage, to preclude the neceſſity of ſending abroad for one of our moſt valuable drugs; which I truſt will ſoon be accompliſhed; I beg leave to inform you, as atteſted by the encloſed certificate, that I have in the two laſt years planted out, at more than four feet diſtance, not leſs than eight hundred plants of the true Rhubarb, all of which were in a thriving condition laſt year. The land they grow on is an encloſure, the ſoil a ſtrong red loam, the ſitu-

atino

ation a gentle declivity towards the weſt. I have likewiſe growing about four hundred nurſery plants, ready to add to the above-mentioned plantation. Having been at conſiderable expence in manuring the ſaid cloſe with well rotted horſe-dung, which was rendered neceſſary by the very impoveriſhed ſtate I found it in from a former bad tenant, and given every attention to forward the commendable and important plan, I can only add the few following rules, in regard to planting the off-ſets, of which ſeveral may be procured from every plant, by dividing the head into many parts, at the time of taking up the roots, either in ſpring or autumn; theſe ſets may be directly planted, if intended for future removal, at two feet diſtance; but, if intended to remain for a crop, if four feet and a half is allowed, they will on a good ſoil occupy the whole to advantage.

Obſerving that the Gold Medal, being the Premium offered for raiſing the greateſt

number of Rhubarb plants, is extended to the end of the year 1793, I hope to have the honour of being properly entitled to it; and am with reſpect,

SIR,

Your obedient humble ſervant,

WILLIAM HAYWARD.

Banbury,
Jan. 29, 1794.

WE, whoſe names are hereunto ſubſcribed, being inhabitants of Drayton, near Banbury, Oxfordſhire, do hereby certify, that, within the two years laſt paſt, John Gregory and John Newton, two ſervants, by the direction of Mr. William Hayward, ſenior, of Banbury, in the county aforeſaid, planted, in a Cloſe in Drayton, full eight hundred plants of the true Rhubarb, at the diſtance of four feet or upwards from each plant; and that the

whole

whole have conſtantly been in a thriving ſtate.

Witneſs,

JOHN WOODFIELD.
WILLIAM GARRET.
EDWARD PRENTIS.
J. HARRIS.

Banbury, Jan. 29, 1794.

THIS is to certify that Mr. John Ball, ſurgeon, in Williton, in the pariſh of St. Decumans and county of Somerſet, is poſſeſſed this year of one hundred and fifty-eight pounds of the Rheum Palmatum or true Rhubarb, of his own growth and curing; and, as he believes, equal to ſuch as is commonly uſed or known by the name of Turkey or Ruſſia Rhubarb; that the whole is of the ſame goodneſs with five pounds ſent herewith as a ſample.

HUGH TORRINGTON, Churchwarden.
WILLIAM LEIGH, } Overſeers.
JAMES POTTER, }

Williton, Oct. 3, 1793.

The method of culture is as follows: About the laſt week in February, or beginning of March, I ſow the ſeeds in a bed well manured with old rotten dung; not broadcaſt, but in drills lengthways of the bed, each trench or drill being ſix inches apart, and one inch deep, in the ſame manner as gardeners ſow parſley: if the ground is very dry, I give it a moderate watering. The weather proving mild, the young plants will begin to appear in about a fortnight; when, if they come up too thick, I thin them to about three inches apart, and when about four inches high tranſplant them to the place where they are to ſtand, and from five to ſix feet aſunder. If the ground is ſhallow, I dig pits three feet deep and three feet wide, and fill them with a manure compoſed of one part of good rotten dung, of another part ſifted coal-aſhes, and of two parts of lime which had been previouſly ſlacked and mixed with a proper quantity of mud or waſte taken from a mill-pond and often turned; and, if the weather ſhould require it, I give them a moderate quantity of

of watering once a week, keep them free from weeds; and I am particularly careful to prevent the ſlugs coming to them, as they are exceedingly fond of the young plants, and would deſtroy them all if not attended to: and for this purpoſe I look over the plantation every night, about eight or nine o'clock, and take the ſlugs away; and ſo continue until I find they are all deſtroyed, and that the plants have taken ſufficient root.

I have this year ſown ſome ſeeds: the firſt week in September, they came up very ſtrong, and are at this time in a growing ſtate; and I am of opinion that this is the beſt time for ſowing them, particularly as they are not ſo liable to be deſtroyed by the ſlugs: the young plants will be fit to be tranſplanted in March, juſt as they begin to appear above the ground, will have the whole ſeaſon to vegetate, and will have made good roots before the ſun becomes too ſcorching, which greatly injures the very young and tender plants.

The method of curing the true Rhubarb is as follows:—I take the roots up when I find the ſtalks withering, or dying away, clean them from the earth with a dry bruſh, cut them in ſmall pieces of about four or five inches in breadth and about two in depth, taking away all the bark, and make a hole in the middle, and ſtring them on packthread, keeping every piece apart; and every morning, if the weather is clear and fine, I place them in the open part of the garden, on ſtages erected by fixing ſmall poſts about ſix feet high in the ground and ſix feet aſunder, into which I fix horizontal pegs about a foot apart, beginning at the top; and the Rhubarb being ſtringed croſsways on ſmall poles, I place them on theſe pegs; ſo that, if it ſhould rain, I could eaſily remove each pole with the ſuſpended pieces, into any covered place. I never ſuffer them to be out at at night, as the damps at this ſeaſon would be apt to mould them; and, if at at any time I perceive the leaſt mark of mould, I rub it off with a dry cloth. In

ſome

ſome of the pieces of Rhubarb which I have cured this year, I have made holes about half an inch diameter in the middle, for the free paſſage of air, and have found that every one of theſe pieces dried better than the others where no ſuch holes were made; and have likewiſe hung ſeveral ſtrings in the kitchen, and never expoſed them in the open air, and found them to dry exceedingly well, and much better than thoſe in the open air. Some years ſince I dried a quantity of Rhubarb on a malt-kiln, keeping up the thermometer to eighty degrees which anſwered well, but I think rather dried too quick: the roots which I have cured this year, are a part of the plantation of 1789, and for which the Society was ſo kind as to give me a Medal.

JOHN BALL.

Williton,
Oct. 3, 1793.

The

The GOLD MEDAL, or THIRTY GUINEAS, being the Premium offered for DRAINING LAND in the year 1793, was this Seſſion adjudged to GEORGE MOORE, of Appleby, near Aſhby de la Zouch, Leiceſterſhire, Eſq. who made choice of the Honorary Reward.

IN claim of this Premium, five Maps or Plans of the different parcels of land laid down by Gunter's ſcale, half an inch to a chain, were received from this Claimant; all which are reſerved in the Society's collection, for the inſpection of the public. By theſe plans it appears, that the land delineated in plan No. 1, conſiſting of two fields, contains ſixteen acres, three roods, nineteen perches; that the length of the drains is eight hundred and forty-eight yards, at nearly eleven-pence three farthings per yard, amounting to forty-five pounds five ſhillings;

the quantity of water delivered per minute, thirteen gallons, one quart, one pint; produce of the land, before draining, very ruſhy, particularly the lower parts, and always rotted ſheep; the value of the lower parts, before draining, ten ſhillings per acre, after draining thirty-five ſhillings per acre; the value of the upper part before draining fifteen ſhillings, after draining forty ſhillings per acre. The ſprings were found in the ſand and between thin ſtrata of ſoft ſtone; the greater part of the drains nine feet deep, width at top forty-two inches, at bottom twelve inches; the remainder of the drains ſix feet deep, the width at top and bottom as above, and the materials ſtone; the ſoil at top, light loam, twelve or fourteen inches deep, then ſand or rock, and red clay at bottom.

The Plan No. 2 repreſents three cloſes, containing five acres; the length of the drains therein, ſeven thouſand one hundred and ſixty yards, at nearly two-pence halfpenny per yard, amounting to ſixty-three pounds

ſifteen

fifteen ſhillings and ſeven-pence; the quantity of water delivered per minute, fourteen gallons; the produce, before draining, ruſhy and ſpringy, and rotted ſheep, now firm and dry; the value before draining twenty ſhillings per acre, now worth forty-two ſhillings per acre; the depth of the drains about eighteen inches, the width at top varying from fourteen to eighteen inches, at the bottom from five to four inches, and all about three feet deep, done with ſtone; the ſoil nearly as in No. 1; the inclination of the drains in two of the cloſes being one degree eaſtward, in the other one degree weſtward.

The Plan No. 3 ſhews two fields; the contents of one being five acres one pole; the length of the drains therein, one hundred and fifty-ſix yards, depth eight feet, at ſomething more than thirteen pence halfpenny per yard, amounting to eight pounds ſixteen ſhillings and ſixpence; the quantity of water delivered per minute, four gallons; the produce before draining ruſhy and ſpringy,

ſpringy, and not worth fifteen ſhillings per acre, now worth thirty ſhillings per acre; width of the drain at top 42 inches, bottom twelve inches ſurfed with ſtone; the ſoil loamy, fourteen inches deep, then red and blue clay. This land was bored in the drain at different places with a three-inch bit, from twelve to fifteen feet: the water, at eight feet deep, came out of ſand and clay intermixed.

The ſecond field in this plan is all arable, and the contents of the improved part ſeven acres; the length of the drains, three hundred and ten yards; depth, three feet; width at top eighteen inches, at bottom three inches; the whole ſurfed with ſtone, at nearly threepence halfpenny per yard, amounting to four pounds nine ſhillings and eight-pence; the quantity of water delivered per minute, three pints; the land before draining ruſhy and ſpringy, and worth twenty ſhillings per acre, now worth twenty-five ſhillings per acre; the ſoil loamy to fourteen inches, then red and blue clay, whence the water riſes.

The

The Plan No. 4 exhibits the form of a meadow, bounded on the eaſt by the river Meaſe; the contents of the part drained, four acres; the length of the drains, two hundred and ſeventy-ſix yards; depth, ſeven feet on an average; width, at top forty-two inches, at bottom twelve, done with ſtone at fourteen pence per yard, amounting to ſixteen pounds two ſhillings; the quantity of water delivered, thirty-ſix gallons per minute, and nearly the ſame throughout the ſummer. Part of this meadow was a bog before draining, inſomuch that it could not be rode over on horſeback, producing boggy ſedge, ruſhes, &c. now firm, dry, land; the meadow worth, before draining, five ſhillings per acre, now worth fifty ſhillings per acre; the upper ſtratum a black peat to thirty-ſix inches, then ſand and gravel, whence the ſprings; the bottom, red and blue clay variably.

On the Plan No. 5 are delineated two fields, bordered on the weſtern ſide by a brook, one, four acres three roods thirty perches, the other, two acres two roods fourteen

fourteen perches; the length of the drains two hundred and eighty yards, the depth eight feet on an average; width at top forty-two inches, at bottom thirty-ſix inches; all done with brick, at nearly one ſhilling and ten-pence per yard, amounting to twenty-five pounds twelve ſhillings and five-pence; the quantity of water diſcharged, thirty gallons per minute. This land was called the Bog, and, before draining, produced only very coarſe ſedge intermixed with ruſhes; is now dry and firm; the greater part of it before draining was worth twelve ſhillings per acre, now worth twenty-five ſhillings per acre; the remainder, before draining, worth ſeven ſhillings per acre, now worth twenty ſhillings per acre.

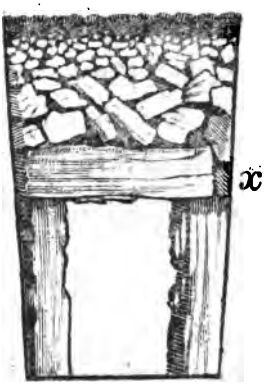
In anſwer to ſome queries reſpecting the manner of forming and completing the drains, the following letter was received, with two ſketches ſimilar to the cuts annexed.

N.° 1

THE Wood-cut, No. 1, repreſents the manner of the ſhallower drains: firſt, a large flat ſtone is placed acroſs at the bottom (if the ſide ſoil be clay; but if it be ſandy, then in the manner of Cut No. 2; as ſand would be liable to fall in and choak up the drain, if done as No. 1 repreſents); a large roundiſh rough ſtone is then placed as at *a*; and other ſtones are placed thereon in a firm manner, ſo as to leave as little hollow as may be. Above theſe are laid a ſufficient quantity of ſtones that have been riddled, and are about the ſize of walnuts or coarſe gravel; on theſe is laid a covering of ling, which, with the coarſe gravel, is ſufficient to ſtop the ſoil from getting deep enough to endanger the drain: on the ling is caſt the ſoil until the drain be filled up and compleated. In the Cut No. 1, there are two cavities for the water to paſs, as *b*, *b*, the lower one being the principal.

In

N. 2



In the drains, as repreſented in cut No. 2, a large flat ſtone is ſet up on edge on each ſide the drain; another ſtone of proper ſize and fitneſs is laid over theſe as a flat cover, as ſhewn at *x*; upon this are placed other rough ſtones, not thrown in promiſcuouſly, but properly arranged for the durability of the work; then coarſe gravel and ling, as in cut No. 1.

Particular care was obſerved in completing the drains before the weather could cauſe the ſides of them to moulder away: this has been found to contribute very much to the

firmneſs of the work. The upper part only, till within eighteen inches of the bottom, was opened firſt; then the lower part was cleared away, and completed, fifteen or twenty yards at a time: ſo that the internal ſurface was not expoſed to the air a ſingle night.

I DO hereby certify that the fields above-mentioned were hollow-drained with rock-ſtone and bricks by me, in the year 1793, and are my property (except the cloſe of five acres, part of No. 3, and which is in my poſſeſſion), and benefited as therein ſtated; and which cloſe of five acres was drained at my expence.

G. MOORE.

The above land was accurately ſurveyed and delineated by me,

J. HENN.

Appleby, Feb. 14, 1794.

WE

WE believe the accounts, as above ſtated by Mr. Henn and Mr. Moore, to be accurate; as witneſs our hands, this 15th day of February, 1794.

THOMAS SLADE, Clerk.
THOMAS SYLECOTE, Surgeon.
MICHAL WARD, Clerk.

In conſequence of the following Account and Certificates, the GOLD MEDAL, being the Premium offered for IMPROVING LAND LYING WASTE AND UNCULTIVATED, was this Seſſion adjudged to EDWARD CORBET, of Ynys y Maengwyn, in the pariſh of Towyn, in the county of Merioneth, Eſq.

ACCOUNT of Waſte Land drained, encloſed, and improved, in the pariſh of Towyn and county of Merioneth, being part of Ynys y Maengwyn Demeſne, belonging to Edward Corbet, Eſq.

Quantity of land.

	£.	s.	d.
144 acres 2 roods 30 perches, valued at 1l. 10s. per acre,	217	0	7½

Expences attending the above.

1980 yards of embankment, at 20s. per rood,	247	10	0

Brought

	£.	s.	d.
Brought forwards,	247	10	0
7942 yards of draining, at 5s. per rood,	248	3	9
Sundry other expences; timber for flood-gate, railing, gates, &c.	40	6	3
Total expence,	536	0	0

Intereſt of money expended, at 5 per cent. deducted from the valuation, will leave a clear annual rent of £.190: 4: 7

The above land was floated over by ſalt water, every full and change of the moon, except about ten acres; the quality of it moſtly peat, and of very ſmall value before the improvement took place. It ſupported, great part of laſt ſummer, ninety-ſeven cattle and horſes, and above one hundred ſheep, as appears by an account of the ſtock taken at that time by me,

JOHN DAVIES, Land-ſurveyor.

MERIONETH-SHIRE. } John Davies, of Pennal, in the county aforeſaid, land-ſurveyor, came before me, and ſwore that the quantity of bog peat land, embanked from the ſea on the weſt, and drained on the eaſt or upper ſide to complete it for feeding paſture land, which it now is, was meaſured by him (the ſaid John Davies), and that the annexed menſuration is his own, and that it is juſt and true.

JOHN DAVIES, Land-ſurveyor.

Sworn before me, the 4th of January, 1793,

FRANCIS PARRY, Clerk, one of his Majeſty's Juſtices of the Peace for the ſaid county.

Witneſs,

P. MAURICE, Vicar of Towyn, Merionethſhire.

OWEN OWEN, of Dolyffanog.

WE

WE, the Miniſter and Churchwardens of the pariſh of Towyn, in the county of Merioneth, do certify that the account delivered in to the Society of Arts, Manufactures, and Commerce, by John Davies, land-ſurveyor, of the lands drained and improved, and embanked by Edward Corbet, Eſq. of Ynys y Maengwyn, is juſt; and we alſo certify that the lands alluded to are in a proper ſtate of cultivation, and at preſent yield paſturage to a great number of horſes, cattle, and ſheep.

P. MAURICE, Vicar of Towyn.
JOHN JONES,
DANIEL THOMAS, } Churchwardens.

SIR,

I HAVE ſent this day a model of the embankment, with the trough and valve that permits the freſh waters running out, and prevents the ſalt water inundating the lands, as it ever did, before the formation of

the embankment; with that view only I began it.

The ſoil towards the ſea, at the depth of two yards, is in general peat earth; but where the drains are drawn above the peat bog, univerſally gravel.

As the Society ſo liberally hold out diſtinguiſhing marks of their approbation, I do myſelf the honour of laying before them the progreſs of my endeavours at improvement.

I am, SIR,

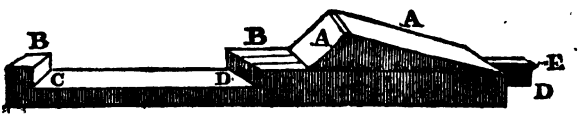
Your moſt obedient ſervant,

EDWARD CORBET.

Ynys y Maengwyn,
near Machyntteth, Montgomeryſhire,
December, 24, 1793.

Sketch

Sketch of Mr. Corbet's Embankment.



Explanation of the Wood Cut of the Embankment at Ynys y Maengwyn.

A A. The Embankment, whoſe baſe is thirty-ſix feet, and perpendicular height nine feet, whereby the ſalt water is prevented overflowing the land.

B B. The Surface of the Marſh in its original ſtate.

C. The inſide Ditch, thirty-three feet wide, five feet deep, and at the bottom level to low-water mark.

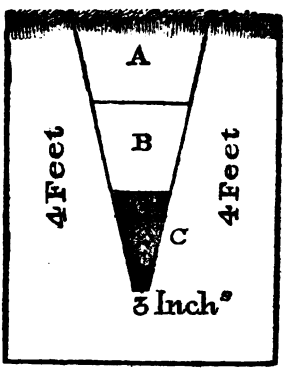
D D. The Trough, fifty feet long, two feet broad, and two feet deep; this conveys the water from the drained lands under the embankment to the ſea.

At E, is a Valve, forced open when the weight or preſſure of the freſh water is greater

greater than that of the ſalt water, and cloſed when the preſſure of the ſalt water becomes greater than that of the freſh water.

The ſpring tides riſe from eight to ten feet above low-water mark, and from three to five feet on the embankment.

Section of the Covered Drains.



All the covered drains are made as in wood-cut No. 2, where B repreſents a clod fixed under the ſurface; theſe are cut at one halfpenny a yard; A, the ſurface, filled up two feet wide at top. Below B is the cavity C, through which the water paſſes.

PAPERS IN CHEMISTRY.

CHEMISTRY.

The Thanks of the Society were given to WILLIAM PATTENSON, of Ibornden, in Kent, Eſq. for the following Communications, relative to a Compoſition for preſerving WEATHER-BOARDING.

SIR,

I TROUBLE you with this letter on the following occaſion. I have often thought ſomething much wanted for preſerving Weather-boarding, &c. from the injuries of the weather; tar and oker, and other mixtures recommended for the purpoſe, I have tried, but do not find they anſwer: I therefore have made many experiments, to diſcover a compoſition better adapted to the purpoſe, and think I have found one which anſwers my expectation: it is impenetrable to water, is not injured by the action of the weather, or heat of the ſun,

ſun, which hardens it, and conſequently increaſes its durability; it is much cheaper than paint, and more laſting.

I have ſent a ſmall ſpecimen,* which has been expoſed to the weather for many months; it has rather a rough appearance, but that may be eaſily altered in the preparation: if you think it deſerving the Society's notice, you will pleaſe to acquaint them with it; and ſhould they ſuppoſe it an article of public uſe, I ſhall be happy in communicating to them its compoſition and mode of preparation.

I am, SIR,

With great reſpect,

Your moſt obedient ſervant,

WILLIAM PATTENSON.

Thornden,
Feb. 5. 1794.

Mr. MORE.

* Theſe ſmall ſpecimens are reſerved in the Society's Repoſitory.

SIR,

SIR,

I RECEIVED the favour of your letter; and with great pleaſure inform the Society of the compoſition for preſerving Weather-boarding, &c. which is as follows:

Three parts air-ſlacked lime, two of wood-aſhes, and one of fine ſand, or ſea-coal aſhes; ſift theſe through a fine ſieve, and add as much linſeed oil as will bring it to a conſiſtence for working with a painter's bruſh; great care muſt be taken to mix it perfectly. I believe grinding it as paint would be an improvement: two coats are neceſſary; the firſt rather thin, the ſecond as thick as can conveniently be worked. I am not certain as to the length of time the ſamples I ſent you were expoſed to the weather, but ſuppoſe ſeven or eight months; it was expoſed immediately on its being applied to the wood; and from the nature of its compoſition, there is no doubt but it is very durable; as it certainly will im-

prove in hardneſs by time, and is much ſuperior for the purpoſe to any thing I know of.

I am,

SIR,

Your obliged,

And obedient ſervant,

WILLIAM PATTENSON.

Ibornden,
March 12, 1794.

Mr. MORE.

The

The GOLD MEDAL was this Seſſion voted to Mr. HENRY BROWNE, of Derby, for his ingenious conſtruction of an EVAPORATOR, for the uſe of Chemiſts and Preparers of the various kinds of Salts, as ſhewn in the Print annexed, and deſcribed in the following Letter; and ſtill more fully to explain the Machine, a complete Model, preſented by Mr. BROWNE, is reſerved in the Society's Repoſitory, for the inſpection of the Public.

SIR,

I HEREWITH ſend you a Plan and Model of a Furnace I uſe for Evaporation, and have found more ſerviceable for that purpoſe than any copper or boiler I ever ſaw; and I am of opinion it might be advantageouſly applied to the drying malt, as the heat is more equally diſperſed, and the vapour carried off, much quicker than by the

mode now practiſed. I have not obſerved the exact quantity of moiſture which may be exhaled in a given time by a given quantity of fuel; but I can with ſafety ſay that at leaſt one half of the fuel, and a great deal of trouble, is ſaved by this contrivance; as it does not require near the attendance that boilers in general do, in ſupplying it with liquor or fuel, which need only be done twice in twenty-four hours; for the fire, being confined in the firſt inſtance to the bottom, and the evaporation being regular, a certain quantity either of fuel or liquor may be put in at certain times: but the greateſt advantage this Furnace poſſeſſes, and the only part I flatter myſelf may be called new, is, the atmoſphere being rendered of an equal heat with the liquor; by which means more moiſture is carried away by the current of hot air, than by any other means I am acquainted with.

The utility of this Evaporator, therefore, is in my opinion twofold: firſt, the evaporation is much quicker, with a leſs quantity of

of fuel, than in the generality of the boilers now in uſe; ſecondly, the operator, as well as the whole neighbourhood, cannot in the leaſt be affected or annoyed, let the vapour or ſteam be ever ſo pernicious. That evaporation is much greater by this mode, will appear very plain, when the courſe of the heat is pointed out: it is firſt carried under the veſſel, then reverted back on the ſides, and finally it is carried over the ſurface; by which means the air, that is in contact with the liquor, is ſo heated and highly rarified, that the fluid is raiſed into vapour or ſteam, much quicker, and with leſs fuel, than if the atmoſphere was cold; and, as the air neceſſary to keep the fuel in combuſtion paſſes over the ſurface of the liquor, every pernicious vapour is carried with it into the fire, where it is decompoſed, or at leaſt ſo changed as to be no longer pernicious.

As the diminution of labour in all operations is ſo much to be wiſhed, I think it neceſſary to add, that by this contrivance

one man can do more work than three can in the uſual method, the fire-place being ſo contrived, that as much fuel may be put on at one time as will ſerve twelve, or even twenty-four hours; and the ſame may be ſaid of the ſupplying the veſſel with freſh liquor.

I am, SIR,

Your very humble ſervant,

HENRY BROWNE.

Derby, Jan. 31, 1794.

Mr. MORE.

Fig. 1

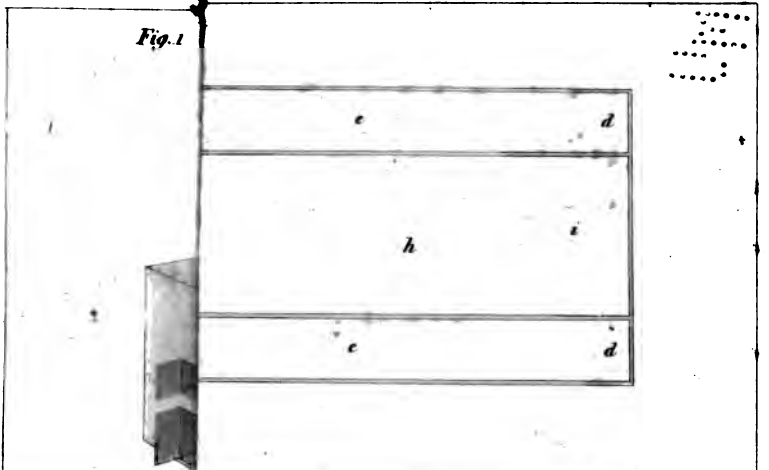
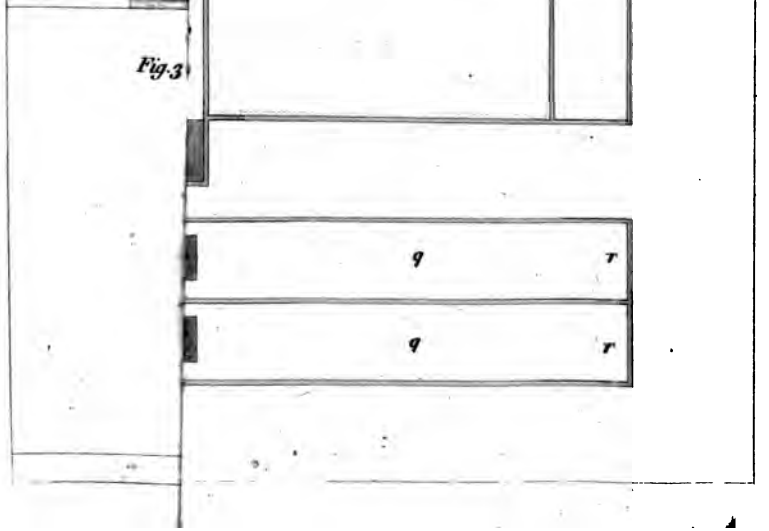


Fig. 2

Fig. 3



DESCRIPTION *of the* PLATE *of Mr.* BROWNE'S EVAPORATOR.

Fig. 1. Is a view of the whole Furnace or Evaporator complete.

Fig. 2. A ſection lengthwiſe of the Boiler, Fire-place, &c.

Fig. 3. A tranſverſe ſection of the Boiler and Flues, looking towards the Fire-place.

Fig. 4. A plan from A. to B. of Fig. 2.

Fig. 5 Plan from C. to D.

Fig. 6. Plan from E. to F.

Fig. 7. Plan from G. to H.

a. The opening or hole through which the air enters; and being admitted through the three holes *b*, *b*, *b*, paſſes over the ſurface of the liquor in the ciſtern or boiler *x*, and then paſſing again by ſimilar openings at the oppoſite end of the ciſtern *y*, *y*, deſcends by the vacuity *c*, *c*, and, by the holes *d*, *d*, is conveyed, by the paſſages *e*, *e*, to the aſh-hole or under-ſide of the grate, and thus ſerves to actuate the fire, bringing with it the ſteam ariſing from the boiler.

The air and ſteam, having thus ſerved the purpoſe of actuating the fire, are, with the ſmoke ariſing from the fuel, conveyed by the back of the furnace *g*, *g*, under the boiler along the paſſage *h*, *h*; and, riſing through an aperture *i*, *i*, under an inclined caſt-iron plate *k*, *k*, paſſes through two holes, *l*, *l*, into the paſſages *m*, *m*, and riſes, by two other holes *n*, *n*, into a vacuity *o*, *o*, whence it ariſes again by two holes *p*, *p*, enters the flues *q*, *q*, and thence into the chimneys *r*, *r*.

s, *s*. The ſtoking-hole of the furnace.

t, *t*. The aſh-hole.

u. *v*. The opening through which the fuel is put into the furnace.

w. The door, or opening to the ciſtern.

The ſame letters refer to the ſame parts in all the ſeveral drawings.

The

The Thanks of the Society were given to ROBERT BATSON, of Limehouſe, Eſq. for the following Communications relative to the DRY-ROT IN TIMBER; and it is requeſted that any perſons who may think proper to repeat Mr. Batſon's Experiment, will favour the Society with ſome account of the reſult.

SIR,

THE Society for the Encouragement of Arts, Manufactures, and Commerce, continuing to offer a Premium for diſcovering the cauſe of the Dry-Rot in Timber, and diſcloſing a certain method of Prevention; I beg leave to lay before them an account of a method I have put in practice, and which at preſent appears to me to have fully ſucceeded.

The Dry-Rot having taken place in one of my parlours in ſuch manner as to require

the pulling down part of the wainſcot every third year, and perceiving that it aroſe from a damp ſtagnated air, and from the moiſture of the earth, I determined, in the month of June, 1783, to build a narrow cloſet next the wall through which the damp came to the parlour; which had the deſired effect: but, though it put a total ſtop to the rot in the parlour, the evil ſoon appeared in the cloſet; fungi of a yellow colour aroſe to a great degree, in various parts of it. In the autumn of the year 1786, the cloſet was locked up about ten weeks: on opening it, numerous fungi were obſerved about the lower part of it, and a white mould was ſpread by a plant reſembling a vine or ſea-weed, and the whole of the inſide, china, &c. was covered with a fine powder of the colour of brick-duſt. It being then cleaned out, I ſoon perceived, what, indeed, I did not expect, that the evil had impregnated the wood ſo far as to run through every ſhelf therein, and the brackets that ſupported them; it had alſo ſeized upon and deſtroyed

ſtroyed a movable board for breaking ſugar on. I therefore, in the beginning of the year 1787, determined to ſtrip the whole cloſet of lining and floor, and not leave a particle of the wood behind, and alſo to dig and take away about two feet of the earth in depth, and leave the walls to dry, ſo as to deſtroy the roots or ſeeds of the evil. When by time and the admiſſion of air, and good bruſhing, it had become ſufficiently dry and cleanſed, I filled it, of ſufficient height for my joiſts, with anchor-ſmiths aſhes; knowing that no vegetable would grow in them. My joiſts being ſawed off to their proper lengths, and fully prepared, they and the plates were well charred, and laid upon the aſhes; particular directions being given that not any ſcantling or board might be cut or planed in the place, leſt any duſt or ſhavings might drop among the aſhes. My flooring boards being very dry, I cauſed them to be laid cloſe, to prevent the dirt getting down, which, I thought, in a courſe of time might bring on vegetation.

The

The framing for lining the cloſet was then fixed up, having all the lower pannels let in to be faſtened with buttons only, that, in caſe any vegetation ſhould ariſe, the pannels might with eaſe be taken out to examine them.

This having now been done upwards of ſix years, and no vegetation or damp appearing, the whole of the pannels and floor remaining in the ſame ſtate as when firſt put in, I ſhall have a ſatisfaction in taking a part of the floor up, if the Society think proper to appoint a Committee to examine the place.

If what I have produced meets the approbation of the Society, I wiſh it made public under their ſanction, that as full a trial as poſſible may be made of it; and if at a proper diſtance of time it proves of general utility, any honorary token of the Society's approbation will be received with much ſatisfaction by me.

I think it may be highly neceſſary, in ſome ſituations, to take out a greater depth of earth; and where aſhes can be had from a

foundery, they are fully equal to thoſe from anchor-ſmiths; but by no means depend upon houſe-aſhes.

I am, SIR,

Your very humble ſervant,

ROBERT BATSON.

Limehouſe,
December 7, 1793.

Mr. MORE.

IN conſequence of the foregoing letter, a Committee was appointed to examine and report the ſtate of the cloſet, who having met on the 15th of May, 1794, and the wainſcot being taken down, and the flooring boards taken up, they were all found entirely free from any appearance of the rot; and, from all the circumſtances then obſerved, it was the opinion of the Committee, that the method adviſed by Mr. Batſon, when fully and completely put in execution, appeared to have anſwered every intention mentioned in

in his letter; and this opinion seemed the more justly founded, as two pieces of wood, (yellow fir) which had been driven into the wall as plugs, without being previously *charred*, were affected with the rot.

PAPER
IN
POLITE ARTS.

POLITE ARTS.

The GREATER SILVER PALLET and TWENTY GUINEAS were this Seſſion voted to Mr. GEORGE BLACKMAN, for diſcovering to the Society, for the uſe of the Public, his method of making OIL-COLOUR CAKES. A full account of the proceſs, with the opinions of ſeveral eminent artiſts on their utility, are hereunto annexed.

GENTLEMEN,

CONSCIOUS of your great attention to the improvement of every branch of the Polite Arts; and believing that, by my new-invented Oil-Colours in Cakes, I may furniſh to artiſts and others a uſeful and convenient method of preparing colours for painting in Oil; I beg leave to ſubmit to your conſideration, and for your encouragement,

encouragement, a box of Colours ſo prepared; and, if they are found worthy your attention, I ſhall eſteem it a high honour to receive ſuch marks of your approbation as you may think proper to beſtow on,

GENTLEMEN,

Your moſt obedient humble ſervant,

GEORGE BLACKMAN.

London, March 19, 1793.

Society for encouragement of Arts, Manufactures, and Commerce.

The box above mentioned contained ſeveral cakes of colours, made according to the proceſs hereafter deſcribed; a vial of poppy oil; a glaſs with proper hollows for rubbing down the cakes with oil, in the ſame manner as water-colour cakes are rubbed down with water; a vial of ſpirit of turpentine, for cleaning the pencils; and a vial of copal varniſh, for varniſhing the painting when finiſhed.

A full

A full deſcription of the method of preparing Mr. GEORGE BLACKMAN'S *ſuperfine* OIL-COLOUR CAKES, *as communicated to the Society, February* 18, 1794, *and practiſed by him before the Committee.*

Take of the cleareſt gum maſtick, reduced to fine powder, four ounces; of ſpirit of turpentine, one pint; mix them together in a bottle, ſtirring them frequently till the maſtick is diſſolved: if it is wanted in haſte, ſome heat may be applied, but the ſolution is beſt when made cold. Let the colours to be made uſe of, be the beſt that can be procured, taking care that, by waſhing, &c. they are brought to the greateſt degree of fineneſs poſſible. When the colours are dry, grind them on a hard cloſe ſtone (porphyry is the beſt) in ſpirit of turpentine, adding a ſmall quantity of the maſtick varniſh; let the colours ſo ground become again dry; then prepare the compoſition for forming them into cakes, in the following manner:—Procure ſome of the pureſt and whiteſt ſpermaceti you can obtain; melt it over a gentle

fire, in a clean earthen veſſel; when fluid, add to it one third of its weight of pure poppy oil, and ſtir the whole well together; theſe things being in readineſs, place the ſtone on which your colours were ground on a frame or ſupport, and, by means of a charcoal fire under it, make the ſtone warm; next grind your colour fine with a muller; then, adding a ſufficient quantity of the mixture of poppy oil and ſpermaceti, work the whole together with the muller to a proper conſiſtence; take, then, a piece, of a fit ſize for the cake you intend to make; roll it into a ball, put it into a mould, preſs it, and it will be complete.

When theſe cakes are to be uſed, they muſt be rubbed down in poppy or other oil, or in a mixture of ſpirit of turpentine and oil, as may beſt ſuit the convenience or intention of the artiſt.

In

In conſequence of Letters written to the ſeveral Artiſts under mentioned, who had been requeſted to make trial of Mr. BLACKMAN's OIL-COLOUR CAKES, the Society were favoured with the following anſwers.

MR. COSWAY preſents his compliments to Mr. More, and begs the favour of him to inform the Gentlemen of the Committee of Polite Arts, that, in conformity to their requeſt, he has made ſeveral experiments with the colours he received by their order; and is of opinion that the manner in which they are compoſed, is a new and uſeful diſcovery; and the great advantage they poſſeſs of drying without a ſkin on the ſurface, is a very eſſential improvement on the uſual mode of Oil-painting, particularly for ſmall works.

Mr. Coſway has delayed writing his opinion until now, that he might with more certainty judge of the properties of the colours with regard to drying, &c.

Stratford Place,
January 9, 1794.

GENTLEMEN,

AS I am desired to give you my opinion concerning a box of Colours prepared in a certain manner, and presented for your approbation by Mr. Blackman, I take the liberty to say, I found the same pleasure and convenience in working them as in Oil-Colours, in every respect. I can say nothing as to their durability; that must be left to time. One advantage these colours possess above others, they must be very convenient to travellers, as they are always fit for immediate use, they not drying hard nor skinning over. The pallet from whence I painted the sketch before you, is now as fit for use as at first.

I am,

GENTLEMEN,

Your obedient humble servant,

THOMAS STOTHARD.

Newman Street,
January 31, 1794.

Society for the encouragement of Arts, Manufactures, and Commerce.

IT having been aſſerted that the Oil-Colour Cakes prepared by Mr. Blackman, and for the diſcovery of which the Society had voted to him their Greater Silver Pallet and Twenty Guineas, would not work after they had been kept ſome time, and become fully dry; Mr. Stothard was requeſted again to make trial of them; and the three Cakes prepared before the Committee, the one of Red Lead, another of Pruſſian Blue, and the other of Lake, were tried by him on the 5th of March, 1794, and acknowledged by him to work equally well with thoſe he had before tried. The three Cakes of Red Lead, Pruſſian Blue, and Lake, which were originally ſent by Mr. Blackman, and had been in the cuſtody of the Society and Mr. Coſway, from March, 1793, were then put into the hands of Mr. Stothard; and he was deſired to try them; when he gave it as his clear opinion, that they worked equally well with the others, and thinks Mr. Blackman's diſcovery of the art of making ſuch cakes

well deſerving the reward beſtowed upon him by the Society. Some ſamples of the colours tried that day by Mr. Stothard are reſerved.

Mr. Abbot, alſo, who obligingly made trial of the old Red-Lead cake, ſaid it worked perfectly well, and much more reſembled, in the working, an earthy matter than Red Lead uſually does; which he conſidered as a great merit; ſaid he has frequently uſed colours prepared by Mr. Blackman, particularly his Red Lead; which, as far as he can judge, is better preſerved from changing, by this method of preparing, than by any other he has met with; and, as the tint given by Red Lead is peculiarly adapted to the higheſt lights of fleſh, more eſpecially on the forehead in portrait-painting, he thinks Mr. Blackman's diſcovery, if it fully anſwers that purpoſe, a very advantageous one to artiſts; that he has ſo good an opinion of Mr. Blackman's ingenuity and merit on this head, that he has ordered

ordered a ſet of colours prepared in his manner, in bladders, for his own uſe.

N. B. It may here be proper to obſerve that Mr. Blackman's Colours in bladders are prepared with a mixture of Spermaceti, and differ from his Cakes only in having a larger proportion of oil.

PAPERS

IN

MECHANICKS.

MECHANICKS.

FORTY GUINEAS were this Seſſion voted to Mr. ROBERT HALL, junior, of Basford, near Nottingham, for his ingenious Invention of a Method to EXPAND A SET OF BARS PARALLEL TO THE AXIS OF A CRANE; by which means the velocity of the Rope in raiſing Weights may be increaſed or diminiſhed in proportion to the load to be raiſed.

SIR,

AS the Society for the Encouragement of Arts, Manufactures, and Commerce, have for ſeveral years been deſirous of ſome improvement on the Crane for Wharfs, I have ſent a model of one, for their inſpection, with ſome drawings to elucidate it; and beg you will do me the honour to lay them before the Society.

I am, SIR,

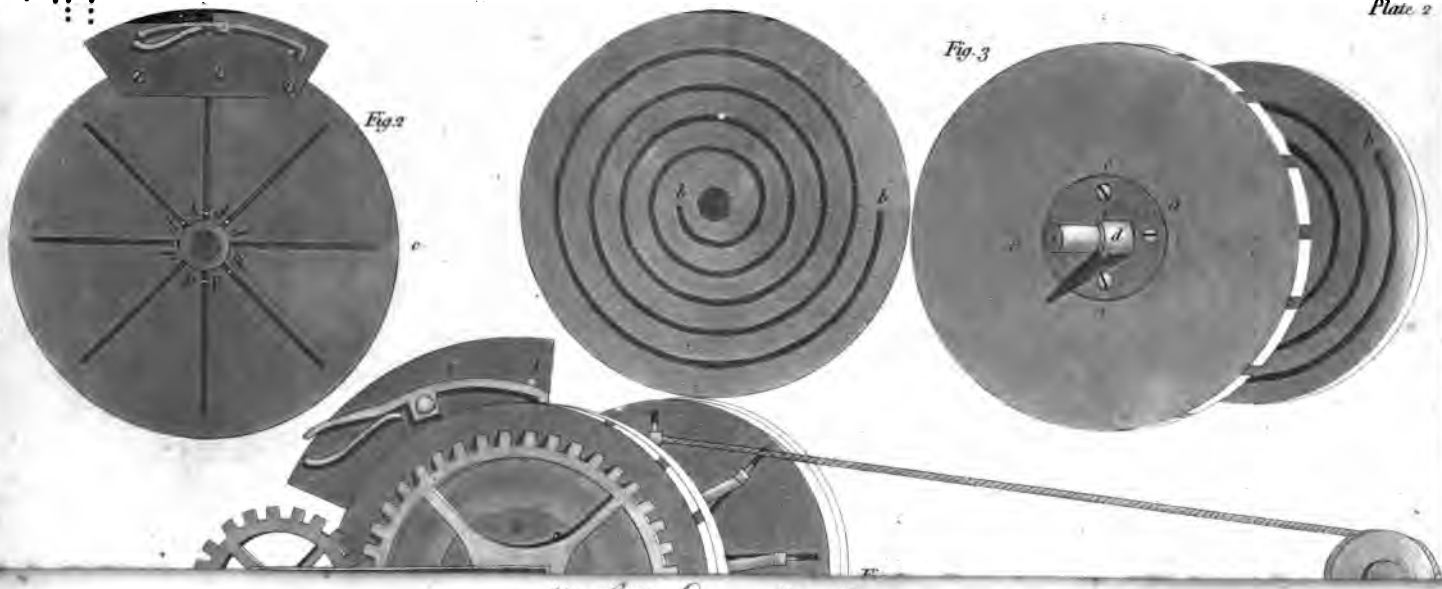
Your moſt humble ſervant,

Basford, *Jan.* 13, 1794. ROBERT HALL, junior.

Mr. MORE.

Explanation of the PLATE *of Mr.* HALL's EXPANDING CRANE.

The Reel, fig. 1, is formed of two parts, fig. 2 and 3. The wheels or circles of fig. 3 are held faſt on the ſpindle or axis of the wheel by pins, *a*, and have ſpiral grooves cut in each wheel, as ſeen at *b*. The wheels, fig. 2, have eight long mortiſes, *c*, *c*, cut in each of them, and are connected with an iron tube, *d*, having a flange or collar at each end, with ſcrews, *e*, *e*, to faſten the wheels. When all the parts are put together, as fig. 1, the axis *f*, fig. 3, goes through the tube and wheels, fig. 2, ſo that the two parts are connected. In fixing the croſs bars, one of which is ſeen detached, fig. 4, the parts between the dotted lines, *g*, *g*, ſlide in the mortiſes, fig. 2; and the ſmall ends, or tenons, *h*, *h*, ſlide in the ſpiral grooves, fig. 3. When the two parts are locked by the catch, *i*, fig. 1, which has a ſpring for that purpoſe, the bars are faſt; but, when the relative ſituations of fig. 2 and 3 are altered, by the hook *k* being paſſed through the hole



Mr Hall's Expanding Crane.

hole *l*, as ſhewn in fig. 6, the bars will all of them remove nearer or further from the centre, by means of the ſpiral groove, fig. 3, letter *b*, ſo that the reel may be enlarged or diminiſhed at pleaſure.

To ſet the hands of the workman at liberty, there is a hook, *k*, which, when the reel is to be altered in its dimenſions, muſt be put into the hole *l*, ſo that it ſhall ſupport the catch up, and hold the part fig. 2 faſt at the ſame time. The handle, *m*, is then to be turned till the reel is of the ſize required; when this is done, puſh out the hook *k*, and the crane is ready for work.

It is neceſſary to obſerve that the tenons, *h*, *h*, muſt be cut, ſo that the outſide of all the bars next the rope ſhall be at an equal diſtance from the centre. If the tenon of the firſt bar that is placed in the reel be cut like the tenons, *h*, *h*, fig. 4, the laſt of them muſt be cut the ſame as the tenons, *n*, *n*, fig. 4; and all the other tenons, at the extremities of the ſeveral bars, muſt be at proper diſtances between theſe extremes, as is ſhewn by the white dots P in the mortiſes fig. 2.

The SILVER MEDAL was this Seſſion voted to GEORGE BUTLER, Eſq. for his Invention of a BUCKET, for drawing Water out of deep Wells, of which a Plate and Deſcription are annexed; and the Model preſented by Mr. Butler is reſerved in the Society's Repoſitory, for the uſe of the Public.

SIR,

YOU may poſſibly recollect my well at Downe in Kent, which is about three hundred and ſixty feet deep; and is worked by two buckets and a horſe-wheel, each bucket holding little leſs than a barrel; and are the ſame ſort of buckets, with the ſame mode of emptying, as at Dorking, Dover, Haſted, and all the deep wells I have met with.

The great weight of iron on thoſe buckets to make them ſink immediately on deſcending to the water, being obſerved, together

with the heavy flat iron chain by which they are hung to the rope; and which, paſſing over a flat-grooved wheel above, brings the face of the buckets properly to the ciſtern catch, ſuggeſted the following idea.

A valve, of five inches diameter, was put into the lower head of a common light beer-barrel; a croſs was placed in the centre of the top of the barrel; it was then let down into the well by a rope; it filled through the valve in the bottom, and came up very ſteady and full, with ſcarce any drip: what little drip there was fell immediately down the well from the valve in the centre of the bottom, without wetting the deſcending rope, ſuch wetting being very prejudicial to the rope, as in uſe with the old buckets; for by the nature of their bails they aſcend ſwinging, ſometimes ſtrike in paſſing, and by ſplaſhing over the ſides are never full.

Two buckets on the new conſtruction were immediately made with iron hoops, as light as poſſible; they have worked four years without being out of condition; the hoops

hoops, chains, &c. of theſe buckets weigh leſs than the old ones by two hundred weight. The well rope is little more than half the ſize and coſt; a much greater quantity of water is raiſed in an equal time, and the labour of the horſe much relieved.

Herewith I have ſent you a working model of the machine, ſhewing the action of the valve buckets, which I requeſt you to preſent to the Society for the Encouragement of Arts, Manufactures, and Commerce. I have not the leaſt doubt that many gentlemen of the Society may improve upon the hint; and I ſhall be much pleaſed to be the means of giving any aſſiſtance to thoſe countries who labour under the lamentable inconvenience of deep wells and little water.

I am, SIR,

Your moſt obedient ſervant,

GEORGE BUTLER.

Great Ruſſel-ſtreet,
Nov. 22, 1793.

Mr Butlers improved Water Bucket.

Explanation of the PLATE *of the Model of Mr.* BUTLER'S MACHINE FOR RAISING WATER, AND IMPROVED WATER-BUCKET.

A A. Two poſts fixed in the curb of the well, oppoſite each other, and grooved within to receive the ends of the collar.

B. Two parallel bars, which bear down the ſmall iron arms or croſs as the bucket aſcends, and open the valve to diſcharge the water.

C C. The collar reſting on pegs in the groove; and, being lifted by the bucket in aſcending, communicates by a rod or line down the groove, with the ſhort end of the moveable bars at D: the ſhort end of theſe bars, which work on an axle at E, being ſo moved, draws forward the trough, F, with an increaſed velocity, by means of the lines paſſing from it over the pullies G, G, and faſtened to the long end of the bar at H, by this action the trough runs under the bucket, and is ready to

deliver the water into the ciſtern, I; when the valve Q, (which is about five inches diameter) is opened by the croſs, L, ſtriking the bars at B.

F. The trough, moving on four braſs rollers; which, on the water being delivered, runs back, as the bucket deſcends, with the ſame velocity as it was drawn forward: this is done by means of the weight, K, hid within the lining of the model, and connected by a line, paſſing over a pulley in the frame above, to the centre of the hinder part of the trough.

L. Two thin pieces of iron fixed acroſs the top of the bucket: in the centre of theſe pieces is placed the ſmall iron ſtandard, M, on which is a collar with four arms, N, made to move up and down; above the collar is a ſmall braſs pulley in the mortiſe, O, in the upper part of the ſtandard, and a loop to which the well-rope, P, is made faſt: to one of the arms of the collar is tied a cord,

which paſſes over the braſs pulley above, and then down to the lip of the valve; ſo that the croſs, L, being preſſed againſt the bars, B, is forced downwards, the cord drawn up, and the valve opened.

The following Attempt to obtain and preſerve PRACTICAL STANDARDS, for adjuſting, in future, the Weights and Meaſures of this kingdom, is reſpectfully preſented to the Society by their SECRETARY.

MANY learned and ingenious perſons have employed themſelves in attempting to diſcover an univerſal Standard of Weights and Meaſures, renewable (in caſe of its being loſt) in any climate, and under any circumſtances; and ſome papers on this ſubject have been ſubmittted to the public, within theſe few years, by Mr. Hatton (ſee Vol. I. page 239) and Mr. Whitehurſt; but, after paying every attention to this matter in my power, I am induced, with due deference to ſuch authorities, to conclude, that ſuch a ſtandard may rather be conſidered as a thing deſirable, than likely

to be obtained, at leaſt ſo as to ſerve practically the uſes in common life. I ſhall therefore beg leave to ſubmit my thoughts on this head, conſidering that what may be hereafter ſaid, is intended ſolely as an eaſy method of forming and preſerving a Standard of Weights and Meaſures for the uſe of theſe kingdoms, or any other that may think proper to adopt it; and which, it is preſumed, will anſwer all that is wiſhed for in obtaining a Practical Standard for adjuſting in future the weights and meaſures of this country.

For this purpoſe I adviſe, that a certain weight be aſſumed, and called a pound; and, to avoid, as much as poſſible, any innovation or confuſion, let this aſſumed weight be adjuſted by the preſent ſtandard pound weight at his Majeſty's Exchequer, or the Guildhall of London. This weight may be made of braſs; but, as all metals are ſubject to decay and loſs by corroſion, by the air, friction, &c. let a piece of agate, or other hard ſtone, be cut into the form of an egg; and

when brought exactly to the weight of the braſs ſtandard by carefully grinding and poliſhing, let it be preſerved in a proper caſe lined with ſoft cloth or velvet, to be reſorted to whenever there may be occaſion. A piece of agate of this form ſeems ſo unlikely to be injured by any means, except ſuch a degree of violence as may break it, that there can be little doubt of its remaining of the ſame weight for ages; more eſpecially as it will be effectually guarded from the action of the air, and all motion in its caſe, and never expoſed, but on occaſion of comparing the braſs ſtandard with it; which, to prevent error, ſhould be done at ſtated times, as once in twelve months, on a day ſpecifically appointed for the purpoſe, in the preſence of ſuch officers as may be nominated, and with as much form and preciſion as is uſed in the trial of the Pix to determine the ſtandard of the Coin.

I have hitherto only mentioned the pound weight; but it is obvious that all the parts of the pound, as the half, the quarter, the ounce,

ounce, &c. ſhould be provided for in the ſame manner. Let it be underſtood that the pound hitherto ſpoken of is ſuppoſed to be what is generally called the Avoirdupois pound, and divided into ſixteen ounces, each ounce ſubdivided into ſixteen drachms. As this is the weight by which all large commodities are weighed, it does not appear to have been thought neceſſary that weights ſmaller than the half-drachm, or the thirty-ſecond part of the ounce, ſhould be introduced; but, as that weight is nearly equal to thirteen grains and one half Troy, it may be further divided, if judged proper, ſo as to weigh ſmall matters, as very fine thread, or other ſuch like valuable commodities, more accurately than is generally practiſed; and, if the drachm is ſubdivided into eight parts, each of them will be equal nearly to three grains and a half Troy. To avoid confuſion, all weights for this purpoſe, when ſold, ſhould differ in form from the grains uſed as Troy weight, and be called by ſome other name.

As it has been always cuſtomary to have weights of different denominations uſed in theſe kingdoms, and no ſufficient reaſon has appeared to juſtify an alteration in the practice; and as the Avoirdupois weight has been conſtantly uſed for large quantities of goods, and the Troy weight for ſmaller quantities and the more valuable commodities; let a Troy pound be prepared as has been already adviſed for the Avoirdupois, with its equal in agate, to be reſerved and uſed in all caſes as the other; and let this pound be divided, as has been the uſage, for the goldſmith, into ounces, penny-weights, and grains; and, for the apothecary, into ounces, drachms, ſcruples, and grains; each of them being adjuſted in the moſt accurate manner poſſible, ſo that all the aliquot parts ſhall bear a due proportion to the whole: and to this the moſt ſcrupulous exactneſs is neceſſary; for, from a defect in this inſtance, moſt of the complaints on the want of a due ſtandard ſeem to have originated.

Having

Having thus, in as conciſe a manner as poſſible, ſubmitted my opinion on an eaſy way of obtaining a practical ſtandard for weights, which may at all times be reſorted to without danger of ſuffering any diminution in bulk or weight; I ſhall only further obſerve that it may be adviſable to have three ſets of theſe agate ſtandards, to be kept at different places; whereby the danger of the loſs of ſuch ſtandard, by fire or otherwiſe, will be effectually guarded againſt.

I ſhall now proceed to ſuggeſt a method, whereby meaſures of length, and conſequently meaſures of capacity, may be formed from the afore-mentioned ſtandards of weight.

It has been univerſally allowed that the weight of a cubic foot of clear ſoft river-water is equal to ſixty-two pounds and a half Avoirdupois weight, or one thouſand ounces; and the moſt celebrated authors have thence calculated and publiſhed the hydroſtatic weight of many ſolids: this appears a ſingular circumſtance, and not likely to

to have happened by chance, but to have been accompliſhed by means that have not been tranſmitted to us. As this, however, if not ſtrictly true, is not far from the truth, I propoſe forming a meaſure on its principle, to be called the Britiſh foot.

Let, therefore, a hollow cube be made of braſs, of ſuch dimenſion as to exactly contain a quantity of ſoft river-water, equal in weight to ſixty-two pounds and a half, or one thouſand ounces of the above-deſcribed Avoirdupois weight. To arrive at as great a degree of preciſion as poſſible, it may be proper to fix ſome ſtandard of heat, at which, it is intended, the above quantity of water may be reckoned to fill the cube, and this may be at ſixty degrees of Farenheit's thermometer.

It will probably be attended with conſiderable difficulty and expence to procure ſuch a veſſel; but as it is to be preſumed that workmen may be found to execute it, the expence ſhould be no object; for ſuch weights as are above deſcribed, agreeing with ſuch

ſuch a veſſel of water, will give a preciſion to hydroſtatic experiments, and determine the relative weight of ſolids to water, more clearly than is now eaſily done, and, at the ſame time, form a decided ſtandard of meaſure.

Having therefore procured ſuch a cubic veſſel, the length of one ſide of it is to conſtitute the Britiſh foot, which is to be divided into twelve inches, and thoſe inches into ſmaller parts, as uſual. It is hardly neceſſary to ſay that ſuch a meaſure of length being obtained, it will be proper that ſtandards be made in the manner formerly executed by Mr. Bird; or, if any better have been diſcovered, that ſuch be adopted.

From the ſtandard Britiſh foot are to be calculated all meaſures of length, as yards, furlongs, miles, &c. It will, therefore, be highly proper to have ſome of theſe ſtandards moſt carefully executed, and preſerved, as has been already mentioned concerning the ſtandard weights; and that thoſe in uſe be alſo from time to time examined, and compared

pared with ſome one kept for that purpoſe: ſo that, ſhould any error ariſe, it may not long ſubſiſt, and conſequently not become of magnitude ſufficient to do any injury.

From this meaſure of length, it is eaſy to aſcertain all meaſures of capacity; and if the ſeveral old Acts of Parliament which are ſtill in force be carefully attended to, and the perſons employed to authenticate the meaſures by ſtamps, are fully informed of the neceſſity of the ſeveral meaſures being of the forms and dimenſions preſcribed by thoſe laws, it is preſumed a general meaſure and weight, ſufficiently accurate for all practical purpoſes, may be eaſily made and introduced throughout the kingdom; and of what advantage this would be, need not be mentioned.

At the beginning of this paper, it was obſerved, that I intended merely to confine myſelf to a practical method of obtaining a weight which might ſerve as a ſtandard for this kingdom. All theory, and all mathematical calculations, have therefore been

ſedulouſly

ſedulouſly avoided; and I have through the whole endeavoured to form the new ſtandard on the baſis of the old one, thereby avoiding as much as much as poſſible all innovation; and, although it has been frequently propoſed to divide all weights and meaſures decimally, which certainly in ſome caſes would have its advantages, yet, when it is conſidered how much the generality of the people would be perplexed and confounded, ſhould ſuch a change be adopted, and reflecting how well the trade and commerce of the kingdom may be carried on by conforming to the ancient mode, I have adviſed the adjuſting the weights and meaſures of this country by the means above mentioned, which, as appears to me, may be eaſily put in practice with ſufficient accuracy for all the common purpoſes of life.

PAPER

IN

COLONIES AND TRADE.

COLONIES AND TRADE.

The GOLD MEDAL, being the Premium offered by this Society for conveying from the Iſlands in the South Sea, to any of the Iſlands in the Weſt-Indies ſubject to the Crown of Great Britain, that valuable Plant the BREAD-FRUIT TREE, in a growing State, was this Seſſion adjudged to CAPTAIN WILLIAM BLIGH, of his Majeſty's ſhip Providence, from whom the following Letters and Accounts were received.

SIR,

I CONSIDER it proper that the Society for the Encouragement of Arts, Manufactures, and Commerce, ſhould be made acquainted with the reſult of a voyage to the South Sea, which I have had the honour to execute.

The intention of it was, by his Majeſty's directions, to convey Plants of the Bread-

Fruit Tree from Otaheite to St. Helena and the Weſt-India Iſlands, and likewiſe to bring to England many rare and valuable plants.

I herewith encloſe to you the different receipts which I received abroad, on my delivering the plants to the perſons authoriſed to take charge of them; together with a paper, which ſhews at one view the reſult of the voyage. Thoſe brought to England were delivered at Kew Garden, and amounted to ſeven hundred; among which were ſome fine plants of the Bread Fruit. I requeſt you will be pleaſed to lay theſe papers before the Society for their information.

I have the honour to be,

SIR,

Your moſt obedient,

And moſt humble ſervant,

WILLIAM BLIGH.

Durham Place, Lambeth,
Oct. 26, 1793.

Mr. MORE.

To

To CAPTAIN WILLIAM BLIGH,
Commander of his Majeſty's ſhip Providence.

SIR,

I AM directed by the Governor and Council to acknowledge the receipt of the following trees and plants, viz.

10 Pots and 1 Tub of Bread-fruit Plants, very fine.
12 Pots, ſickly.

2 Pots, containing	2 Plants of	Avees (Apples).
1 Ditto	4 Ditto	Rattah (Cheſnut).
2 Ditto	5 Ditto	Ay,yah (Jambo).
1 Ditto	1 Ditto	Mattee (Ficees).
1 Ditto	4 Ditto	Ettow
2 Ditto	2 Ditto	Pecah, beſides roots.

TIMOR PLANTS.

1 Pot, containing	4 Plants of	Nanche (Sourſop).
1 Ditto	1 Ditto	Lemon China.
1 Ditto	2 Ditto	Jambo Mare.
1 Ditto	4 Ditto	Jambo Armariah.
1 Ditto	2 Ditto	Mango.
1 Ditto	2 Ditto	Penang (Beetle Nut).
1 Ditto	2 Ditto	Long Pepper.
1 Ditto	2 Ditto	Black Pepper.
1 Ditto	1 Ditto	Bughn ah Kanangah.

The Governor and Council were greatly obliged, and highly gratified by a view of the delightful ſcene on board your ſhip, which impreſſed their minds with the warmeſt and moſt animated glow of gratitude to his Majeſty, for his royal goodneſs and benevolent attention ſhewn to the welfare of his ſubjects here and in the Weſt-India Iſlands; and it alſo raiſed in them an inexpreſſible degree of wonder and delight, to contemplate a floating garden (fraught with what may prove of ineſtimable value to that part of mankind who have the bleſſing of reſiding under his auſpices) tranſported in luxuriance from one extremity of the world to the other.

At the ſame time the Board could not help feeling a juſt ſenſe of obligation, on perceiving how ſtrong an enthuſiaſt you have been in the execution of his Majeſty's benign wiſhes; for it was impoſſible not to obſerve in every part of your ſhip the diſregard ſhewn to perſonal convenience, and the attention and excellent contrivance

diſplayed

diſplayed in the accommodation and preſervation of your invaluable cargo.

The Board will carefully repreſent theſe matters at home, as alſo the attention paid by your botaniſts here; and they preſent you with their beſt thanks, in the name of their Honourable Maſters, for your kind exertions in every inſtance to oblige them.

I have the honour to remain, SIR,

Your moſt obedient ſervant,

W. W. DOVETON, Secretary.

St. Helena,
24 Dec. 1792.

A liſt of Plants delivered by WILLIAM BLIGH, *Eſq. Commander of his Majeſty's ſhip Providence, into the hands of* DR. ANDERSON, *at the Botanical Garden, St. Vincent's.*

	Plants.
Bread-fruit, two of which are of *Timor*,	333
Rattah,	25
Ay,yah,	38
Av,vee,	9
O,raih,	3
Pee,ah,	7

	Plants.
Cocoa-Nut,	4
Mango,	15
Iamblang,	10
Iambo Iremavah,	5
Iambo Mà,ree,	9
Blimbing,	2
Chermailah,	3
Karambolah,	1
Lemon China, or Noneſang,	3
Coſambee,	2
Sereeboah,	2
Sereedown,	2
Peenang,	4
Nan,ka,	40
Dan,greedah,	1
Bughn, ah Kanang, ah,	3
Gwavah,	1
Coffee,	5
Almonds,	2
Plantains,	3
Ettow,	7
Mattee,	3
Sow, or Sao,	2
Total	544

THIS is to certify that the above plants were received from Willliam Bligh, Eſq. Commander of his Majeſty's ſhip Providence, at the Botanical Garden, all in the beſt order.

ALEXANDER ANDERSON, Superintendant of the Botanical Garden.
JAMES SETON.

SIR,

I RECEIVED laſt Saturday the honour of your letter of the 5th inſtant; and have taken the firſt opportunity of laying it before the Committee appointed to act in the reception of the Bread-fruit and other valuable Plants lately received. I am authoriſed to aſſure you, in their name, of the high ſenſe they entertain of your exertions and great merit in bringing to ſo happy a concluſion the beneficent object of our moſt gracious Sovereign, in the arduous taſk he thought proper to commit to your charge.

The Committee, of which I have the honour to be Chairman, will, at the meeting of the Aſſembly, report your ſervices to

the Houſe, and the high value they entertain of them.

Annexed, you will find a receipt for the various plants delivered to the order of the Committee, and by them diſtributed in ſuch manner as they have conceived beſt adapted to carry into effect his Majeſty's moſt gracious intentions to his faithful and loyal ſubjects of Jamaica.

The neceſſary orders ſhall be given to the perſons ordered to collect, in the different parts of this Iſland, as many of the plants propoſed to be ſent home for his Majeſty's garden at Kew, as the ſhortneſs of the time will permit, in order to have them ready to be ſhipped by the 1ſt of next month, according to your deſire.

I have the honour to be,

SIR,

Your moſt obedient, humble ſervant,

HENRY SHIRLEY,

Chairman of the Committee.

Kingſton, Jamaica,
March 20, 1793.

WILLIAM BLIGH, Eſq. Commander of his Majeſty's ſhip Providence.

An Account of PLANTS *landed at* JAMAICA, *to the order of the Honourable Committee appointed to receive the same.*

KIND OF PLANT.	Plants landed at Henderson's Wharf, for county of Middlesex	Greenwich, for county of Surry and General Depot.	Port Morant, for Surry and General Depot.	Savannah La Mar, for county of Cornwall.
OTAHEITE.				
Bread-fruit	84	75	105	83
Ratttah	5	9	14	5
Ay,yah	6	18	10	7
Av,vee or Vee	-	3	7	
O,raiah	-	-	3	
Vaihee	-	-	2	
Pee,ah	-	-	7	
Cocoa Nut	-	2		
Ettow (red dye)	-	-	12	
Mattee (ditto)	-	-	3	
POSSESSION ISLAND, NEW GUINEA.				
Sao or Sow, a kind of Plum,	-	-	3	
TIMOR.				
Bread-fruit, which bears seeds,	-	-	1	
Mango	4	4	5	4
Iamblang	-	7	8	
Iambo Iremavah	-	-	4	
Iambo Mà,ree	-	-	13	
Blimbing	-	-	2	
Chermailah	-	-	3	
Cosombee	-	-	2	
Nanka	10	14	23	10
Namnam	-	-	5	
Pomegranates	-	2		
Sereeboah	-	-	2	
Peenang, or Beetle Nut	-	-	5	
Sereedown	-	-	2	
Bintaloo	-	-	2	
Bughn, ah Kanangah	-	-	2	
	109	134	245	109

KIND OF PLANT.	Plants landed at Henderſon's Wharf, for county of Middleſex	Greenwich, for county of Surry and General Depot.	Port Morant, for Surry and General Depot.	Savannah La Mar, for county of Cornwall.
Brought over	109	134	245	109
Tickwood Plant, or Iattee	1	—	1	
Veſſels containing young plants of Namnam, Sow, Nanka, and others, 5 pots -	—	—	10	
SAINT HELENA.				
China Orange -	—	—	3	
Dwarf Peach -	—	—	1	
Almonds - -	—	—	3	
Coffee - -	1	2	2	
Nutmeg from St. Vincent's	—	—	1	
Poorah, ow, from Otaheite,	—	—	1	
	111	136	267	109

N. B. The Tick Plant landed at Henderſon's Wharf was ordered to be ſent to Port Morant, to Mr. Viles.

RECEIVED from William Bligh, Eſq. Commander of his Majeſty's ſhip Providence, the ſeveral Bread-fruit and various other kind of plants, named and contained in the foregoing liſt, amounting in number to ſix hundred and twenty-three plants in the whole, which have been diſtributed by the Committee appointed to act during the

receſs of the Houſe of Aſſembly, in the reception of the ſaid plants, to the ſeveral pariſhes of this Iſland, in ſuch manner as they conceived moſt beneficial to the public, and moſt agreeable to his Majeſty's moſt gracious intention.

Signed at Kingſton, 20th March, 1793.

HENRY SHIRLEY,
Chairman of the Committee.

An

An Account of the Result of CAPTAIN BLIGH'S *Voyage to procure* PLANTS *in the* SOUTH SEA.

KIND of PLANT.	Plants landed at St. Helena.	Plants landed at St. Vincent's.	Plants at JAMAICA, landed at Henderson's Wharf, for county of Middlesex.	Greenwich, for county of Surry and General Depot.	Port Morant, for county of Surry and General Depot.	Savannah La Mar, for county of Cornwall
OTAHEITE.						
Bread-fruit -	12	331	84	75	105	83
Rattah -	4	25	5	9	14	5
Ay,yah -	5	38	6	18	10	7
Av,vee or Vee -	2	9	-	3	7	
Oraiah -	-	3	-	-	3	
Pee,ah -	2	7	-	-	7	
Vai,hee -	-	-	-	-	2	
Cocoa Nut -	-	4	-	2		
Ettow (red dye)	4	7	-	-	12	
Mattee (ditto)	1	3	-	-	3	
POSSESSION ISLAND, NEW GUINEA.						
Sao, or Sow, kind of Plum, -	-	2	-	-	3	
TIMOR.						
Bread-fruit, Otaheite kind -	-	2				
Bread-fruit, which bears seeds,	-	-	-	-	1	
Mango -	2	15	4	4	5	4
Iamblang -	-	10	-	7	8	
Iambo Iremavah -	4	5	-	-	4	
Iambo Ma,ree -	2	9	-	-	13	
Blimbing -	-	2	-	-	2	
Chermailah -	-	3	-	-	3	
Karambola -	-	1	-	-		

KIND OF PLANT.	Plants landed at St. Helena.	Plants landed at St. Vincent's.	Plants at JAMAICA, landed at Henderson's Wharf for county of Middlesex.	Greenwich, for county of Surry and General Depot.	Port Morant, for county of Surry and General Depot.	Savannah La Mar, for county of Cornwall
Nonesang, or Lemon China	1	3				
Cosambee	—	2	—	—	2	
Nanka	4	40	10	14	23	10
Namnam	—	—	—	—	5	
Pomegranates	—	—	—	2	—	
Seeree boah, or Long Pepper	2	2	—	—	2	
Seeree down	2	2	—	—	2	
Peenang, or Beetle Nut	2	4	—	—	5	
Bintaloo	—	—	—	—	2	
Dangreedah	—	1	—	—	—	
Bughn, ah Kanangah	1	3	—	—	2	
Iattee, or Tickwood	—	—	1	—	1	
SAINT HELENA.						
Plantain	—	3	—	—	—	
China Orange	—	—	—	—	3	
Dwarf Peach	—	—	—	—	1	
Almonds	—	2	—	—	3	
Nutmeg from St. Vincent's	—	—	—	—	1	
Coffee	—	5	1	2	2	
Gwawah	—	1	—	—	—	
Poorah, ow	—	—	—	—	1	
Vessels containing young plants of Namnam, Sow, Nanka, &c. 5 pots,	—	—	—	—	10	
	50	544	111	136	267	109

The total number of Plants delivered at St. Helena, St. Vincent's, and Jamaica, amounts to one thousand two hundred and seventeen; and seven hundred plants of various kinds were landed in the River Thames, for his Majesty's Garden at Kew.

REWARDS

BESTOWED BY THE

SOCIETY,

From October, 1793,

To June, 1794.

REWARDS

BESTOWED IN

AGRICULTURE.

TO JOB HANMER, Eſq. for having planted more than five thouſand Oaks intermixed with other Foreſt-Trees, the GOLD MEDAL. See page 105.

Claſs 17. To LEWIS MAJENDIE, Eſq. for having planted upwards of ten acres with Spaniſh Cheſnut for raiſing Timber, the GOLD MEDAL. See page 109.

Claſs 18. To JOHN SCHOLEFIELD FIRTH, Eſq. for having planted upwards of eight acres with Spaniſh Cheſnut for raiſing Timber, the SILVER MEDAL. See page 125.

Claſs 37. To the Rev. Thomas Dunham Whitaker, for having planted ſixty-four thouſand one hundred and thirty-five Larches, the Gold Medal. See page 132.

Claſs 38. To Mr. Thomas Gaitskell, for having planted forty-three thouſand three hundred Larches, the Silver Medal. See page 134.

Claſs 57. To Mr. Thomas Rodd, for having planted nine Acres and an half with Oſiers, Twenty Pounds. See page 136.

Claſs 58. To Mr. Thomas White, for having planted nine acres with Oſiers, Ten Pounds. See page 142.

Claſs 61. To George Nelthorpe, Eſq. for having planted thirty-five thouſand Alders, mixed with other trees, the Gold Medal. See page 146.

Claſs

Claſs 65. To LEWIS MAJENDIE, Eſq. for having planted upwards of of ſeven acres with Aſh, the GOLD MEDAL. See page 148.

Claſs 66. To HENRY GODFREY FAUSSETT, Eſq. for having planted five acres with Aſh, the SILVER MEDAL. See page 159.

Claſs 75. To the REV. CHARLES HOPE, for having planted one hundred and fifty thouſand mixed Timber-Trees, the Gold MEDAL. See page 193.

Claſs 88. To Mr. PETER SMITH, for his account of the Comparative Culture of Wheat, the SILVER MEDAL and TWENTY GUINEAS. See page 219.

Claſs 115. To Mr. WILLIAM HAYWARD, for having planted eight hundred plants of the Rheum Palmatum, or true Rhubarb, the GOLD MEDAL. See page 225.

Claſs 119. To Mr. JOHN BALL, for having cured one hundred and fifty-eight pounds of the Rheum Palmatum, or true Rhubarb, the GOLD MEDAL. See page 229.

Claſs 128. To GEORGE MOORE, Eſq. for having drained upwards of forty-two acres of Land by nine thouſand and thirty yards of Drains, made of ſtone and brick, the GOLD MEDAL. See page 240.

Claſs 130. To EDWARD CORBET, Eſq. for having improved one hundred and forty-four acres of Waſte Land, the GOLD MEDAL. See page 244.

IN CHEMISTRY.

To Mr. HENRY BROWNE, for his improved Evaporator for the uſe of Chemiſts, the GOLD MEDAL. See page 257.

IN

IN POLITE AND LIBERAL ARTS.

Claſs 192. To Mr. THOMAS GILES WORTHINGTON, for a Drawing of a Landſcape after Nature, the GOLD MEDAL. Subject, View in Hornſey Wood, Middleſex.

Claſs 193. To Mr. THOMAS PRESTON, for a Drawing, the SILVER MEDAL. Subject, the Birth of Hercules, after Sir Joſhua Reynolds.

Claſs 194. To Miſs COOMBE, for a Drawing, the GOLD MEDAL. Subject, Margaret of Anjou with the Robbers, an original Compoſition.

Claſs 195. To Miſs ELIZABETH CHRISTIANA FANSHAW, for a Drawing of a Landſcape after Nature, the SILVER MEDAL. Subject, View on the River Tamar.

Claſs 198. To Mr. STEPHEN FRANCIS RIGAUD, for a Drawing of the Outlines of a Group, after a Caſt in plaſter, the GREATER SILVER PALLET. Subject, the Body of Ajax taken up by a Soldier.

Claſs 199. To Mr. WILLIAM EDWARDS, for a Drawing of Outlines, after Caſts in plaſter, the LESSER SILVER PALLET. Subject, Anatomical Figures.

Claſs 203. To Mr. JOHN THOMAS BARBER, for an Hiſtorical Drawing, the GREATER SILVER PALLET. Subject, the Battle for the Body of Patroclus. Original Compoſition.

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To Mr. CHARLES ROSSI, for executing a Group, repreſenting the ſtory of Queen Eleonora ſucking the poiſon from the wounded arm of her huſband King Edward the Firſt, FIFTY GUINEAS.

IN MANUFACTURES.

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To CATHERINE WHORRAL, for fine-ſpinning of Flax, FIVE GUINEAS.

IN MECHANICKS.

To Mr. ROBERT HALL, junior, for his invention of an Expanding Crane, FORTY GUINEAS. See page 283.

To GEORGE BUTLER, Eſq. for his invention of an improved Water-Bucket, the SILVER MEDAL. See page 286.

To

To Mr. ROBERT FULTON, for his invention of a Mill for ſawing Marble and other Stone, the SILVER MEDAL.

The Mill is at work near Torbay, Devon; and a Model, preſented by Mr. Fulton, is reſerved in the Society's Repoſitory, for the uſe of the Public.

IN COLONIES AND TRADE.

Claſs 240. To CAPTAIN WILLIAM BLIGH, R. N. for his having conveyed from the Iſlands of the South Sea, to the Iſlands in the Weſt Indies, ſubject to the Crown of Great Britain, ſix hundred and ninety plants of the Bread-fruit Tree in a growing ſtate, the GOLD MEDAL. See page 305.

MISCELLANEOUS.

To SAMUEL MORE, Secretary, for eminent Services, the GOLD MEDAL.

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Cradock, Joſeph, Eſq. M·A. and F.A.S. *Gumley, Leiceſterſhire*
Craig, Charles Alexander, Eſq. *Great Scotland-yard*
Crathorne, Henry Ralph, Eſq. *Yorkſhire, and Upper Brook-ſtreet*
Crawford, Adair, M.D. and F.R.S. *Lincoln's-inn-fields*
††Crawſhay, Richard, Eſq. *George-yard, Thames-ſtreet*
Crawſhay, William, Eſq. *George-yard, Thames-ſtreet*
Crawley, Samuel, Eſq. *Ragnall-hall, Nottinghamſhire*

Creak, Mr. William, *Cornhill*
Criſp, John, Eſq. *abroad*
Criſwell, Mr. William, *Dorrington-ſtreet, Clerkenwell*
Crook, Thomas, Eſq. *Tytherton, near Chippenham, Wilts*
Croſs, William, Eſq. *Thorngrove-houſe, Worceſter,*
Crowder, William Henry, Eſq. *Frederick's-place, Old Jewry*
Crowther, Philip Wyatt, Eſq. *Guildhall*
Curtis, William, Eſq. Alderman, M. P. *Old South-Sea Houſe*

D

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**Dartmouth, William, Earl of, F.R.S.
††Daer, Lord
Dundas, Sir Thomas, Bart. M.P. F.R. and A.S *Arlington-ſtreet,*
Dolben, Sir William, Bart. V.P. M.P. *Abingdon-ſtreet*
Dalliſſon, Mr. Thomas, *Wapping*
Dancer, Mr. John, *Doncaſter*
Daniel, John, Eſq. *Mincing-lane*
Daniell, James, Eſq. *Portman-ſquare*
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Davenport, Richard, Eſq. *Lincoln's-Inn*
Davenport, John, Eſq. *John-ſtreet, Adelphi*

D'Aubant, Lieut. Col. Abraham, F.R. and A *Harley ſtreet*
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Dawſon, William, Eſq. *Mancheſter-ſquare*
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Dent, John, Eſq. M. P. *ditto*
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Devaynes, John, Eſq. *Spring-gardens*
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Dickinſon, Henry, Eſq. *Leadenhall-ſtreet*
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Dickins, Anthony, Eſq. *Lincoln's-inn-fields*
Digby, Kenelm, Eſq.
Ditcher, Philip, Eſq. *Eaſt Bergholt, Suffolk*
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Doe, Thomas, Eſq. *Bygrave Park, Herts*
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P Eardley, Sampson, Lord, M.P. F.R. and A.S.
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Greville, the Honourable Robert, F.R. and A.S.
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Goddard, Thomas, Eſq. *Pall-mall*
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Hawke, Martin Lord
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Haſlang, His Excellency Count
Harcourt, Honourable General William
Honywood, Sir John, Bart. M.P. *Bedford-ſquare*
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Hanmer, Sir Thomas, Bart. *Hanmer, Flintſhire*
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Hankey, Joſeph, Eſq. *Poplar*
Hanmer, Job, Eſq. *Holbrook Hall, Sudbury*
Hardcaſtle, Joſeph, Eſq. *Duck's-foot lane*
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Harrop, Joſeph, Eſq. *Great Marlborough-ſtreet*
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Haſſell, George, Eſq. *Hanover-ſtreet, Hanover-ſquare*
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Hayter, Mr. Jonathan, *King-ſtreet, Cheapſide*
Hayward, Mr. Richard, *Piccadilly*
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††Hebert, James, Eſq. *Great Portland-ſtreet*
Hele, John, Eſq. *Charlotte-ſtreet, Rathbone-place*
Hemming, Mr. John
Henderſon, John, Eſq. *Terrace, Adelphi*
Hendy, Mr. Alexander, *Upper Thornhaugh-ſtreet*
Herne, Mr. William, *Paternoſter-row*
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Hobſon, Mr. Robert

Hobſon, Mr. William, *Thomas-ſtreet, Southwark*

Hoby, Mr. James, *Colebrook-row, Iſlington*

Hodſoll, Edward, Eſq. *Strand*

Hood, Alexander, Eſq. *Royal Navy*

Hood, William, Eſq. *Carron Warehouſe, Earl-ſtreet, Blackfriars*

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Ives, Jeremiah, Eſq. jun. *Cotton, near Norwich*
Jupp, Richard, Eſq. *King's-road*

K.

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Kent, Nathaniel, Eſq. *Fulham, Middleſex*
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Knill, John, Eſq. *Gray's Inn*
Knight, Mr. George, *Cliffe, near Rocheſter*
Knubley, Richard, Eſq. *Bath*

L.

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P Lanſdown, the Moſt Noble the Marquis of
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* Landaff, Richard Lord Biſhop of, F.R.S.
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Lawrence, Richard James, Eſq.

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Leatham, Iſaac, Eſq. *Burton-le-ſtreet, Yorkſhire*

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Leigh, John, Eſq. *Bedford-ſquare*

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P Loveden, Edward Loveden, Eſq. M. P.
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Milford, Richard Lord, M.P.
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Malcolm, Mr. Jacob, *Stockwell*
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Martin, James, Eſq. M.P. *Downing-ſtreet*
Martin, Matthew, Eſq. *Half-moon-ſtreet, Piccadilly*
Martyn, the Rev. Thomas, B.D. F.R.S. *Profeſſor of Botany, Cambridge, Frith-ſtreet, Soho*
Martyn, Thomas, Eſq. *Great Marlborough-ſtreet*
† Maſkall, Samuel, Eſq. *Mitre-court, Milk-ſtreet*
P Maſon, Rev. William, *York*
Matthews, Edward, Eſq. *Sol's-row, Tottenham-court-road*
Mayor, Mr. Joſeph, *Little Moorfields*
Mayhew, John, Eſq. *Broad-ſtreet, Carnaby-market*
Meares, John, Eſq.
✓* Melvill, General Robert, F.R. and A.S. *Brewer-ſtreet*
Meredith, Mr. William, *Hyde-ſtreet, Bloomſbury*
Mercer, George, Eſq. *Queen-Anne-ſtreet, Weſt*
Merry, William, Eſq. *Gower-ſtreet*
Meſman, Daniel, jun. Eſq. *Spital-ſquare*
**Methuen, Paul, Eſq. *Lower Groſvenor-ſtreet*
Metcalfe, Chriſtopher Barton, Eſq. *Weſt-ham*
Metz, Conrad Martin, Eſq. *Blandford-ſtreet, Manchester-ſquare*
††Meyrick, John, Eſq. F. A. S. *Great George-ſtreet*
††Michell, Mathew, Eſq. *Beaufort-buildings, Strand*
Middleton, Mr. John, *Paradiſe-row, Lambeth*
Midford, Mr. William, *Creſcent, Minories*
††Mildred, Daniel, Eſq. *White-hart-court, Grace-church-ſtreet*
Miles, Mr. John, *Birmingham*
Millington, Langford, Eſq. *Tooting, and Berners-ſtreet*

Millington,

Millington, Mr. Thomas, *Golden-ſquare*
P Mills, Abraham, Eſq. *Fence-houſe, Macclesfield*
Mills, Mr. George, *Old Swan-ſtairs*
Milnes, Richard Slater, Eſq. M.P. *Foiſton, near Ferrybridge, Yorkſhire*
Miniſh, Mr. William, *Whitechapel*
Miſt, Mr. Henry, *Long-acre*
Mitchel, Michael, Eſq. *Walthamſtow*
Montreſor, John, Eſq. *Harley-ſtreet*
Montolieu, Lewis, Eſq. F.A.S.
* Montagu, Mrs. Elizabeth, *Portman-ſquare*
Moorcroft, Mr. William, *Half-moon-ſtreet*
Morſe, Leonard, Eſq. F.R.S. and S.A. *Great-George-ſtreet, Weſtminſter*
Morſe, Colonel Robert, F. R. and A.S. Chief Engineer at *Gibraltar*
Morſe, Leonard Becher, M.A. *Great George-ſtreet*
Morris, Mr. William, *Whitcombe-ſtreet*
Mortimer, Thomas, Eſq. *abroad*
Moſeley, Walter Michael, Eſq. *near Worceſter*
Moſer, Mr. John, *Frith-ſtreet, Soho*
Mulcaſter, Colonel Frederick George, *Portſmouth*
Munn, Daniel Rolfe, Eſq. *Hammerſmith*

N.

P Norfolk, Charles Duke of, Preſident, F.R. and A.S.
**Northumberland, Hugh Duke of, V. P. K. G. F. R. and A. S.

Naſh, Mr. Thomas, *Worceſter*
Naſh, John, Eſq. *Caermarthen*
Newcombe, Mr. William, *Bank*
P Newton, Robert, Eſq. *Norton-houſe, Berks*
P Newton, Andrew, Eſq. *Cecil-ſtreet, Strand*
De Neyva, Joſeph da Cunha Para, Eſq. *Artillery-place*
Nichols, Mr. Deputy, *Red-lion paſſage, Fleet-ſtreet*
Nicholas, Robert, Eſq. M.P. *Aſhton Krynes, Wilts*
Nicolay, Mr. Frederick, jun. *St. James's palace*
Nicol, Mr. George, *Pall-mall*
Noble, William, Eſq. *Pall-mall*
Nouaille, Peter, Eſq. *Greatneſs, Kent*
Noireterre, Mademoiſelle De, *Paris*
Norman, Robert, Eſq. *Cannon-ſtreet*
Nutting, Mr. Joſeph, *King-ſtreet, Covent-garden*

O.

* Orford, Horatio Earl of, F. R. and A. S.
P Oſſory, John, Earl of Upper, M.P. F.R. and A.S.
Orde, the Right Honourable Thomas, Governor of the Iſle of Wight, M. P. and F. A. S.
Ogilvie, Scroope, Eſq. *Pall mall*
Ogle, Mr. Thomas, *abroad*
Ord, John, Eſq. F.R.S. *Lincoln's-inn-fields*
Oſborne, Iſaac, Eſq. *Lawrence-Poultney-lane*
P Oſwald, James, Eſq. *Albemarle-ſtreet*

P.

**Portland, William Henry Duke of, V. P. K. G. F. R. and A. S.
P Plymouth, Otho Earl of, F. R. and A. S.
**Pitt, the Right Honourable William, M.P.
* Puſey, Honourable Philip, *Upper Brook-ſtreet*
Pelham, Right Honourable Thomas, M. P. *Stratton ſtreet*
Packer, Mr. William, *King-ſtreet, Soho*
Page, Francis, Eſq. M. P. *Aſhton, Oxfordſhire*
Page, Frederick, Eſq. *Aldermaſton, Berks*
P Paice, Mr. Joſeph, *Bread-ſtreet-hill*
Pakenham, Captain Edward, R. N.
Papworth, Mr. John, *Great Portland ſtreet*
Pariſh, John, Eſq. F A. S. *Gibraltar*
Park, Mr. James, *Baldwin's-Gardens*
Parkes, Mr. Richard, *Broad ſtreet, Bloomſbury*
Parkins, Mr. William, *Adelphi Wharf*
Parker, David, Eſq. *King's Mews*
Parker, Mr. William, *Fleet ſtreet*
Parker, Mr. Samuel, *Bridge-ſtreet, Blackfriars*
Parker, Mr. Thomas, *Fleet-ſtreet*
Parkinſon, Mr. Thomas, *Bloomſbury market*
P††Parkyns, Thomas Boothby, Eſq. V. P. M. P. F. R. and A. S. *Portland place*
Parnell, Mr. Hugh, *Church ſtreet, Spital-fields*
Parry, Mr. Edward, *King-ſtreet, Cheapſide*
Parry, William, Eſq. *Norton-hall, Wiltſhire*

Paxton, William, Eſq. *Queen-ſquare, Holborn*
Paxton, Mr. Chriſtopher, *Alderſgate-ſtreet*
††Payne, Samuel, Eſq. *Vauxhall*
Peacock, Mr. Thomas, *Holborn-bridge*
Pearce, William, Eſq. *Craig's-court*
††Pearſon, James, Eſq. *Baſinghall-ſtreet*
Peel, Robert, Eſq. M. P. *Bury, Lancaſhire*
Pegge, Chriſtopher, Eſq. A. B. *Chriſt-church College*
Peirſon, Peter, Eſq. F. A. S. *Inner-Temple*
Pellatt, Mr. Apſley, *Newgate-ſtreet*
††Penn, Granville, Eſq. F. A. S. *New-ſtreet, Spring-gardens*
P Perin, William Philip, Eſq. F. R. and A. S. *Bloomſbury-ſquare*
Perry, John, Eſq. *Blackwall*
Perry, James, Eſq. *Lancaſter-court, Strand*
Perrott, George, Eſq. *Craycombe-houſe, Worceſter-ſhire*
Petrie, William, Eſq. *Hertford-ſtreet, May-fair*
Phillips, Mr. Samuel, *St. George's road, Blackfriars-bridge*
Pickering, Mr. Robert
Pitt, William Morton, Eſq. M. P. and F. R. S. *Arlington-ſtreet*
† Pitt, Thomas, Eſq. V. P. *Wimpole-ſtreet*
Pitcairn, David, M. D. F. R. and A. S. *Lincoln's-inn-fields*
Planta, Joſeph, Eſq. F. R. S. *Britiſh Muſeum*
Pollett, Mr. Robert, *North Weald, near Epping*
Pontopidan, Charles, Eſq. *Copenhagen*

Porter,

Porter, William, Eſq. *Copthall-court, Throgmorton-ſtreet*

P Potter, Chriſtopher, Eſq. *abroad*

Potter, George, Eſq. *Charing-croſs*

Pourcin, Mr. Joſeph, No. 143, *Tottenham-court-road*

Powell, David, jun. Eſq. *Little St. Helen's*

Powell, John Clark, Eſq. *ditto*

Powell, Baden, jun. Eſq. *ditto*

Powell, Arthur Anneſley, Eſq. *Devonſhire place*

Powlett, William Powlett, Eſq. M. P. *Sambourne, near Stockbridge, and Queen Anne-ſtreet Eaſt*

Powney, Henry, Eſq. *Lamb's-conduit-ſtreet*

P Prado, Samuel, Eſq.

Praed, William, Eſq. M. P. *Tyringham, Bucks*

Pratt, John, Eſq. *Lower Brook-ſtreet*

Prinſep, John, Eſq. *Pall-mall*

Pryce, Benjamin, Eſq. *Saliſbury*

Pulteney, William, Eſq. M.P. *Bath-houſe*

R.

**Richmond, Charles Duke of, V.P. K.G. F.R. and A. S.

**Radnor, Jacob, Earl of, V.P. and F.A.S.

**Romney, Charles Lord, V.P. and F.R.S.

Ruvo, Ettore Carrafa Count

* Ryder, the Right Honourable Dudley, M.P.

††Ridley, Sir Matthew White, Bart. M. P. *Portland-place*

† Raby, Alexander, Eſq. *Steel-yard, and Allhallows-lane*

P Ramey. John, Eſq *Ormeſby, Norfolk*
Ramſbottom, John, Eſq *Alderſgate ſtreet*
††Ramſbottom, Richard, Eſq. *ditto*
Raſtrick, Mr. John, *Morpeth*
Rawlinſon, Abraham, Eſq. *Lancaſter*
Reaſton, Francis Buſhell, Eſq. *Temple*
††Read, John, Eſq. *Great James-ſtreet, Bedford-row*
Rehe, Mr. Thomas, *Shoe-lane*
Reeves, John, Eſq. F.R. and A.S. *Cecil-ſtreet, Strand*
Reeves, Mr. William, *Strand*
Reid, Mr. John, *Fan-ſtreet, Alderſgate-ſtreet*
Reid, Andrew, Eſq. *Bedford-ſquare*
Remmington, John, Eſq. *Milk-ſtreet, Cheapſide*
Rennie, Mr. John, *New-road, Blackfriars*
Repton, Humphrey, Eſq. *Hare-ſtreet, Eſſex*
Reynardſon, Samuel, Eſq. F.R. and A.S.
Richardſon, William, Eſq. *Vauxhall*
Rigg, John, jun. Eſq. *Lorden-ſtreet*
Rigail, William, Eſq *Bartholomew-lane*
Riley, Mr. John, *Long-acre*
Ring, Thomas, Eſq. *Reading, Berks*
Roberts, Rev. William Hancock, D. D. *Loughborough-houſe*
Roberts, Mr. Samuel, *Fleet-market*
Robertſon, Mr. James, *Fleet ſtreet*
††Robinſon, George, Eſq. *Harpur ſtreet*
P Robinſon, Thomas, Eſq. *Vere-ſtreet, Cavendiſh-ſquare*
Robins, Mr. John, *Chancery-lane*
Robſon, Mr. James, *New Bond-ſtreet*

Rodes,

Rodes, Cornelius Heathcote, Eſq. *Balborough, Derbyſhire*

††Rogers, Samuel, Eſq. F. A. S. *Charlotte-ſtreet, Portland-place*

Rondeau, James, Eſq.

†Roſs, George, Eſq. *Balcarras, North Britain*

Rucker, Daniel Henry, Eſq. *Broad-ſtreet, City*

Ruddle, Francis, Eſq. *Queen's-ſquare, Bloomſbury*

Ruffo, Monſieur Vincent, *Naples*

Ruggles, Thomas, Eſq. F. A. S. *Clare, Suffolk*

P Ruſſel, Jeſſe, Eſq. *Goodman's-fieldt*

Ruſſell, John, Eſq. R. A. *Newman-ſtreet*

Ruſſell, Francis, Eſq. F.R. and A. S. *Park-ſtreet, Weſtminſter*

Ruſſel, William, Eſq. *Berwick, Northumberland*

S.

* Shrewſbury, Charles Earl of

P Shafteſbury, Anthony Earl of, F. R. and A. S.

Scarborough, George Auguſtus Earl of

P Stanhope, Charles Earl, F. R. S.

P Scarſdale, Nathaniel Lord

Stuart, the Honourable Charles, M. P.

P St. Aubin, Sir John, Bart. M. P. and F. A. S. *North Audley-ſtreet*

Sheffield, Sir John, Bart. *Portland-Place*

Smith, Sir John, Bart. F. R. and A. S. *Sydling, Dorſetſhire*

††Sinclair, Sir John, Bart. M. P. Pr. B. A. F. R. and A. S. *Whitehall*

 ††Staunton,

††Staunton, Sir George, Bart. LL. D. F.R S. *China*
††Smith, Sir Sidney, Kt. Commander Grand Croſs Capt. R. N. of the Order of the Sword
††Smith, Major-General Edward
St. Barbe, John, Eſq. *Seething-lane*
Sadler, Jonathan, Eſq. *Lothbury*
Sargeaunt, Mr. John, *Great Queen-ſtreet*
Sargent, John, Eſq. M. P. *Lavington, Suſſex*
Saſtres, Mr. Franceſco
Satterthwaite, Mr. John, *Mincing-lane*
Savage, Thomas, M. D. *Conduit-ſtreet*
Savage, Mr. James, *Great Queen-ſtreet*
Saunders, Thomas, Eſq. *Haydon-ſquare, Minories*
Saunders, Mr. George, F. A. S. *Oxford-ſtreet*
Saunders, Mr. Edward Grey, *Edgeware-road*
Saxon, Mr. Samuel, *Parliament-ſtreet*
Schaw, Lieut. Col. John B. *Queen-Ann-ſtreet, Eaſt*
Scholey, Mr. George, *Old-Swan-ſtairs*
Scott, Robert, Eſq. *Wimpole-ſtreet*
Scott, Hugh, Eſq. *Harley-ſtreet, Cavendiſh-ſquare*
Scottney, Bryan, Eſq. *Gower-ſtreet*
Seale, Mr. David, *Peckham*
Seddon, Mr. Thomas, *Alderſgate-ſtreet*
P Selby, Henry Collingwood, Eſq. *Twickenham-common, Middleſex*
P Selwin, Thomas, Eſq. *Soho-ſquare*
Serra, Iſaac, Eſq. *King's-Road, Gray's-inn-lane*
Sewell, Mr. John, *Cornhill*

Sewell, the Rev. George, *Byfleet, near Ripley, Surry*
Shadwell, Mr. Henry, *Beverley, Yorkſhire*
P Shakeſpeare, Mr. George, *Oxford-ſtreet*
Sheffield, Mr. William Evetts
Sheldon, Thomas, Eſq. *Tottenham-court-road*
Sheppard, Thomas, Eſq. *Furnival's Inn*
Sherſon, Robert, Eſq. *New Bridgeſtreet, Blackfriars*
Shiffner, Godin, Eſq. *Weymouth-ſtreet, Portland-place*
P Shipley, Mr. William, Gent. *Maidſtone, Kent*
Shirley, Mr. Lawrence, *Warwick-lane*
P Shore, Samuel, Eſq. *Norton-hall, Derbyſhire*
P Shore, Samuel, jun. Eſq. *Lincoln's-inn*
Sibley, Joſeph, Eſq. *Market-ſtreet, Herts*
Simpſon, Mr. Thomas, *Chelſea Water-works*
Simpkin, Mr. Thomas, *Strand*
Skidmore, Mr. John, *High-Holborn*
Skinner, Thomas, Eſq. Alderman, *Alderſgate-ſtreet*
P Skottow, Nicholas, Eſq. *Berner's-ſtreet*
Slade, John, Eſq. *Hammerſmith*
Slade, Thomas Moore, Eſq. *Chatham*
Small, Mr. Alexander, *Newent*
Smirnove, Rev. James, *Upper Mary-le-bone-ſtreet*
* Smith, George, Eſq.
† Smith, John Spencer, Eſq. *abroad*
Smith, William, Eſq. *Lombard-ſtreet*
Smith, Samuel, Eſq. M. P. *Clapham*
Smith, William, Eſq. M. P. *Clapham*
Smith, Mr. John, *Lad-lane*

††Smith,

††Smith, Joſhua, Eſq. M. P. *Great George-ſtreet, Weſtminſter*

Smith, Simmons Smith Joſhua, Eſq. *Batterſea*

Smith, Mr. Dedrick, *Gerard-ſtreet*

* Smith, Mr. Nathan, *Knightſbridge*

Smith, Captain William, of the Royal Navy

Smith, John, Eſq. *Drapers Hall*

Smith, Henry, Eſq. *ditto*

Smith, Mr. Richard, *Crown-court, Cheapſide*

Smith, Mr. Edward, *Bread-ſtreet, City*

Smith, Mr. John James, *Bunhill-row*

Soane, John, Eſq *Lincoln's-inn-fields*

Somerſet, Capt. John, *Howland-ſtreet*

Songa, Anthony, Eſq. *Copthall-court, Throgmorton-ſtreet*

Sparks, Mr. Robert, *Alderſgate-ſtreet*

Spengler, John, Eſq. *Johnſon's court, Fleet-ſtreet*

Spilſbury, Mr. Thomas, *Snow-hill*

Spilſbury, Mr. William, *ditto*

Splitgerber, Mr. John Chriſtian, *Church-court, Walbrook*

Squire, Samuel, Eſq. *Paper-buildings, Temple*

Staples, John, Eſq. *Addiſcombe, Croydon*

Stainſby, John Alexander, Eſq. *Southampton-ſtreet, Bloomſbury*

Stanhope, Walter Spencer, Eſq. *Upper Groſvenor-ſtreet*

Stanley, George, Eſq. *Ponſonby-hall, Cumberland*

* Steele, Joſhua, Eſq. *Barbadoes*

Steer, Charles, Eſq. *Church ſtreet, Spitalfields*

P††Steers, John William, Eſq. F. A. S. *Inner Temple*

Stephens, Philip, Eſq. M. P. F.R. and A. S. *Admiralty*

††Stephens, Francis, Eſq. F. R. and A. S. *Adelphi*

Stephenſon, Rowland, Eſq. *Queen-ſquare, Holborn*

Stiff, Mr. Thomas, *New-ſtreet, Covent-garden*

Still, Mr. Samuel Sandford, *Bankſide, Southwark*

Stockwell, John, Eſq *Crutched-friars*

Stockdale, Mr Jeremiah, *Holborn*

Stone, Mr. Thomas

Stone, Daniel, A. B. *Univerſity-college*

††Stone, William, Eſq *Rutland-place, Thames-ſtreet*

Storey, Robert, Eſq. *Bedford-ſquare*

Strachan, James, Eſq. *Mincing-lane*

Strattan, Mr. Owen, *Strand*

Street, Mr. James Wallis, *Bucklerſbury*

Strutt, Mr. Jedediah, *Derby*

Style, Robert, jun. Eſq. *Dachett, near Windſor*

Suart, George, Eſq. *Lancaſter*

P Sulivan, Richard Joſeph, Eſq. M.P. F.R. and A.S.

Sulivan, John, Eſq. M.P. *Arlington-ſtreet*

Sumner, George, Eſq. M.P. *George-ſtreet, Weſtminſter*

Supple, Richard, Eſq. *Great Oakley, Northamptonſhire*

P Supple, Richard Brooke, Eſq. F.R.S.

Sutherland, Alexander Hendras, Eſq. *New Broad-ſtreet, City*

Symmons,

Symmons, John, Eſq. *Paddington-Houſe*.
Syms, George William, Eſq. *Southampton-buildings*

T.

**Thanet, Sackville Earl of
Tabrum, Mr. Arthur, *Aveley, Eſſex*
Tabrum, Mr. Robert, *Gracechurch-ſtreet*
P Talbot, Thomas Manſel, Eſq. *Penrie-caſtle, Glamorganſhire*
† Tate, William, Eſq. *Batterſea*
Taitt, William, Eſq. *Cardiff*
Taylor, William, Eſq. *Charlotte-ſtreet, Bedford-ſquare*
Taylor, Mr. Joſiah, *Holborn*
Tekell, John, Eſq. *Lamb's-buildings, Temple*
Templer, James, Eſq. *Stover-lodge, Devon*
P Teixeira, Abraham, David, Eſq. *Mincing-lane*
Thomas David, Eſq. *Pay-Office, Horſe-guards*
Thomſon, Alexander, Eſq. *abroad*
Thomſon, Andrew, Eſq. *Auſtin-friars*
P Thompſon, William, Eſq. *Leeds, Yorkſhire*
Thompſon, Mr. George, *Duke-ſtreet, York-buildings*
Thompſon, Mr. Benjamin, *York-buildings*
Thornbury, William, Eſq. *Jermyn-ſtreet*
P Thornton, Samuel, Eſq. *Clapham*
Thorkelin, Grime, Johnſon, LL.D. *Copenhagen*
Timſon, William, Eſq. *Tooting*

Topham,

Topham, Edward, Eſq. *Weymouth-ſtreet*
Totton, Stephens Dineley, Eſq. M. A. *abroad*
Towle, Mr. Thomas, *Newgate-ſtreet*
Towne, Mr. Francis
††Towry, George Philips, Eſq. *Victualling Office*
P Travers, Mr. Joſeph, *Swithin's-lane*
Trenchard, John, Eſq. *Old Bond-ſtreet*
Trotter, Captain John, *Wimpole-ſtreet*
P Tunſtall, Marmaduke, Eſq. F.R. and A.S. *Wycliffe, Yorkſhire*
Turner, Thomas, Eſq. *Caughley-place, near Sheffnal, Shropſhire*
Turner, John Frewen, Eſq. *Cold Overton, Leiceſterſhire*
P Tyers, James, Eſq. *Little Eaſtcheap*

U.

P Uxbridge, Henry Earl of, F.A.S.
Udney, Robert, ſq. F.R. and A.S.

V.

P Valencia, Richard Lord Viſcount
Vernon, George Venables, Lord, *Park-place*
Veltheim, His Excellency Baron
Valangin, Francis, M.D. *Hermes-hill*
Vale, Mr. John, *Lower Brook-ſtreet*

Valpy,

Valpy, the Rev. Richard, D. D. and F. A. S. *Reading, Berks*
Vaughan, Benjamin, Eſq. M. P. *Jeffrey's-ſquare, St. Mary Axe*
Vaughan, William, Eſq. *Mincing-lane*
Vernet, Monſieur, Sculptor, *Paris*
Vidal, Emeric, Eſq. *Brentford*
Vivian, John, Eſq. *Gray's Inn*

W.

P Warwick, George Earl of, F.R. and A.S.
P Winchilſea, George Earl of, F.A.S.
* Williams, Sir Edward, Bart.
P Webb, Sir John, Bart. F.R. and A.S.
P Willes, Sir Francis, Kt. *Cheſterfield-ſtreet*
Wynne, the Right Hon. Sir William, LL.D. and F.A.S. *Doctors-commons*
Waddington, William, Eſq. *Chatham-place*
Waiſtell, Mr. Charles, *High Holborn*
††Walcot, William, Eſq. F.A.S. *Inner-Temple*
P Wale Gregory, Eſq. *Shelford, near Cambridge*
Walker, John, Eſq. F.R. and A.S. *Gower-ſtreet, Bedford-ſquare*
Walker, Thomas, Eſq. *Wood-ſtock, Oxon*
Walker, Mr. Daniel, *Great Pulteney-ſtreet*
Walker, Mr. Charles, *Warner-ſtreet, Cold-bath fields*

Walker,

Walker, Mr. Thomas, *Epſom*
Walker, Thomas, Eſq. *Croydon*
Walker, Joſhua, Eſq. *Rotherham*
Waller, Charles, Eſq. *Weſt Wickham, Kent*
Waller, William, Eſq. *Charles-ſtreet, Cavendiſh-ſquare*
P Walſh, John, Eſq. F.R. and A.S. *Cheſterfield-ſtreet*
Wanſey, Mr. John, *Lothbury*
P Ward Mr. John, *Air-ſtreet, Piccadilly*
P Ward, Ralph, Eſq. *Great Portland-ſtreet*
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INDEX.

A.

Page

ABBOT, Mr. his opinion of Mr. Blackman's colours 278
ACORNS, premium offered for planting 4
AGATE, ſtandard for weights propoſed 293
AGRICULTURE, premiums offered in 4
Papers in 103
ALDERS, premiums offered for 14
ALDERS, premium offered for planting 146
ANDERSON, Alexander, certificate ſigned 311
ANDREWS, Richard, certificate ſigned 160
ARABLE LAND, premium offered for aſcertaining component parts of 37
ASH, premium offered for 15
Premiums for planting 148
Mode of planting recommended 149
Diſtance of trees 151
Account of plantation of 153
Mixed with willow ibid.
Plan of plantation 155
Obſervations on 157

B.

BACON, John, Eſq. R. A. preſent from 334
BALL, Mr. Gold Medal to 225, 322

BARBER, Mr. I. T. Greater Silver Pallet to 324
BARILLA, premium offered for 51
BATSON, Mr. Thanks to 263
BEANS and WHEAT, premiums offered for 25
BEQUEST, form of 102
BIGGS, Mr. William, his letter on planting Oſiers on Peat Land 144
BLACKMAN, Mr. George, bounty to 271
Opinions on his Oil-Colour Cakes 277
Colours prepared by him in Bladders 279
BLAND, Thomas, Rev. certificate ſigned 205
BLIGH, Captain William, Gold Medal to 305, 327
BLIGHTS, premium offered for preventing 22
BLOCK TIN. See TIN
BOLSTERSTONE, Plantation at 197
BOLTS, driving into Ships, premium offered for 82
BORER, inſect ſo called, premium offered for deſtroying 94
BOTANIC GARDEN, premium offered for 95
BREAD-FRUIT, Letters on conveying to Weſt-Indies 305
Plantations of, premium offered for 91
BROWNE, Mr. Henry, Gold Medal to 257, 322
Preſent from 334
BUCKNALL, Thomas Skip Dyot, Eſq. Letter from on pruning Orchards 206
BUTLER, George, Eſq. Silver Medal to 286, 326
his Water-bucket deſcribed 286
Preſent from 334
Plate of 289
Advantage of 288

C.

CANDIDATES, orders when to attend 97
CANDLES from Refin, premium offered for 55
CASKS, premium offered for ſecuring 58
CASWALL, Rev. George, certificate ſigned by 124
CATER, Mr. preſent from 330
CATERPILLARS, premium offered for deſtroying 48
CHEMISTRY, premium offered in 51
Papers in 251
CHESNUTS, accounts of Plantations of 109, 127
by Nuts and Trees 127
Premiums offered for raiſing 7
Whether indigenous 110 et ſeq.
Bark of uſed in tanning 122
Reaſons for encouraging growth of 114
Uſes of the wood 115
Remarkable property of 116, 117
Account of plantation of 118
What ſoils proper for 121
mixed with other trees 126
CINNAMON, premium offered for 90
CLOTHS. See Hop-Stalks
COCKCHAFER, premium offered for deſtroying 47
COLONIES and TRADE, premiums for advantage of 89
Paper in 305
COALS and ORE, Machine for raiſing, premium offered for 84
CONDITIONS, GENERAL 98
CORBET, Edward, Eſq. Gold Medal to 244, 322
preſent from 331
CORN, Machine for reaping, premium offered for 46
COLLEY, Mr. preſents from 335

COLONIES and TRADE, Paper in 293
COOMBE, Miſs, Gold Medal to 323
COSWAY, Mr. his opinion of Mr. Blackman's colours 275
CRANE, Mr. Hall's expanding 283
Explanation of the plate of 284

D.

DAVIES, John, certificate ſigned 246
DOVETON, W. W. letter ſigned 309
DRAINS COVERED, ſection of 250
DRAINING LAND, premium offered for 40
Claim for 234
Account of 234, 243
Advantage of, 235, 236, 237, 238, 239
DRAWINGS, premiums offered for 65
Hiſtorical premiums for 70
DRILL HUSBANDRY, premium offered for 26
DRILLED WHEAT, advantage of 221
BARLEY, advantage of 222
OATS, advantage of 223
DRY-ROT, paper on 263
owing to fungi 264
Method uſed to prevent 265
Report of Committee on 267

E.

EARTHEN WARE, premium offered for glazing 64
EDWARDS, Mr. William, Leſſer Silver Pallet to 324
ELMS, premium offered for raiſing 8
EMBANKMENT, Model of 249

EVAPORATOR, Model of, by Mr. Browne 257
Diminution of labour by 259
Deſcription and plate of 261

F,

FADEN, Mr. preſent from 331
FANSHAW, Miſs E. C. Silver Medal to 323
FAUSSETT, H. G. Eſq. Silver Medal to 148, 321
FEATHERS, premium offered for clearing from oil 56
FIR, Silver, premiums offered for 11
FIRES, premium offered for extinguiſhing 85
FIRTH, John Scholefield, Eſq. Silver Medal to 109, 319
FISHING NETS, premium offered for weaving 77
FLY on SHEEP, premium offered for cure of 50
FRUIT-TREES. See Blight
Obſervations on growth of 211
Hints on planting 213 et ſeq.
FULTON, Mr. Robert, Silver Medal to 327
Preſent from 334

G.

GAITSKELL, Mr. Silver Medal to 132, 320
GARNETT, Mr. preſent from 334
GLAZING. See Earthen-ware
GOODS, premium offered for Machine for loading 82
GUM, obſervations on the formation of 208

H.

HALL, Rev. John, certificate ſigned by 143
Mr. Robert, jun. bounty to 283. 326
his expanding Crane 283

HAND-MILL, premium offered for 84
HANMER, Job, Esq. Gold Medal to 105, 319
his account of oaks planted 105
HARVEY, Mr. present from 334
HAY, making in wet weather, premium offered for 34
——Miss Isabella, Lesser Silver Pallet to 324
HAYWARD, Mr. Gold Medal to 225, 321
HENN, J. certificate signed 242
HIBBERT, Miss. Silver Medal to 326
HOBSON, Benjamin, certificate signed 294
HODSKINSON, Mr. present from 330
HOE, improved, premium offered for 47
HONORARY PREMIUMS, for Drawings 65, 66
HONYWOOD, William, certificate signed 160
HOP-STALKS, premium offered for cloth from 77
HOPS, premium offered for destoying the Fly on 48
HOPE, Rev. Charles, Gold Medal to 161, 321
HORSES, Stall feeding, premium offered for 33
preventing turning about in railing water 87

I.

JAMAICA, account of Plants landed at, by Captain Bligh 313
JOLLIE, Mr. present from 329
JORDAN, Mr. W. bounty to 326
IRON, Fine Bar, premium offered for 61
ITZINPLITZ, presents from 328

K.

KALI, premium offered for 92

L.

LAND. See Draining.
Improving, premium offered for 41
Gaining from the Sea, premium offered for 44
Waſte improving, claim for 244
Quantity improved 245
LANDSCAPES, premiums for drawings of 69
LARCH, premiums offered for 10
LARCHES, premium for planting 132
Accounts of plantations of 132, 134
Advantage of planting 200
LEAD, premium offered for preparing 61

M.

MAJENDIE, Lewis, Eſq. Gold Medal to, 109, 148, 319, 321
his account of the Cheſnut-tree 148
MACHINES, premiums offered for drawings of 68
MANUFACTURES, premiums for encouraging 76
MANURES, premium offered for 42
MARTYN, Rev. Thomas, preſent from 329
MASQUERIER, Mr. I. I. Leſſer Silver Pallet to 325
MAURICE, Rev. P. certificate ſigned by 247
MEASURES, of length, ſtandard for computing 299
MECHANICKS, premiums for inventions in 81
METAL ROPE or CHAIN, premium offered for 83
MIXED TIMBER-TREES, Claim for 161
Account of planting 194, 199, 200
Sorts planted 195, 197

MIXED TIMBER-TREES, Weight of 196
Mode of planting ibid.
Quantity planted 199
Advantage of planting 202
MODELS and MACHINES, Catalogue of 336
MONTGOMERY, James, certificate signed 123
MOORE, George, Esq. Gold Medal to 234, 322
More, Samuel, Gold Medal to 327
MORTON, James, certificate signed 205
MULBERRY-TREES, premiums offered for 19
MYDDELTON, Mr. J. Greater Silver Pallet to 324

N.

NARCISSUS, premium offered for drawing of ſtatue of 67
NATURAL HISTORY, premium offered for 72
NELTHORPE, George, Eſq. Gold Medal to 146, 320
NIND, Rev. P. certificate signed by 141
NUTMEGS, premium offered for 69

O.

OAKS, premium offered for raiſing 5, 6
OFFICERS, Liſt of 339
OIL, premium offered for refining 55
See Feathers
Colour-cakes, bounty for diſcovering 271
Box of deſcribed 272
Method of preparing 273
ORCHARDIST, what 211
Tools fit for 218

ORCHARDS, letter on pruning 206
Advantages of pruning 207
Medicating 209
ORLEANS, foreſt of, change of trees in 113
ORME, Mr. preſent from 331
OUTLINES, premiums offered for drawing 68
OSIERS, premiums offered for 13
Premiums for planting 136
Number on an acre 137
Cautions for planting ibid. 141
Expence of planting 138
Planted on Peat Land 144
Advantage of ibid.

P.

PAINT, premium offered for ſubſtitute for baſis of 62
PAPER from raw vegetables, premium offered for 79
PARTRIDGE, Rev. John, certificate ſigned by 147
PASSAGE, diſcovery of to South Sea, premium offered for 93
PATTENSON, William Eſq. Thanks to 253
PLANTS, letters on conveying from the South Sea, 305 et ſeq.
General account of thoſe brought by Captain Bligh 316
POLITE ARTS, Paper in 269
Premiums offered in 65
Conditions annexed to 74
POOR, premium offered for maintaining the 80
PORTRAIT, premium offered for 67
POTATOES, premiums offered for 30
PRESTON, Mr. Thomas, Silver Medal to 323

PROVISIONS, premium offered for preſerving ſalted 58
PRUNING. See Fruit-Trees.
PUBLIC, Addreſs to 3

R.

RELHAN, Rev. Richard, preſent from 330
REWARDS beſtowed, liſt of 319
RHUBARB, premium offered for cultivating 35
Premium offered for curing 36
Claims for growth and cure of 225
cultivated by offsets, ibid. 227
Value of grown in England 226
Quantity planted ibid
Method of culture 230
Slugs deſtructive to 231
Seeds of, time for ſowing 231
Method of curing 232
RIGAUD, Mr. S. F. Greater Silver Pallet to 324
RIVERS, Machine for clearing, premium offered for 85
ROBERTSHAW, Thomas, certificate ſigned 129
RODD, Mr. Thomas, premium to 136, 320
ROOTS and HERBS, for feeding Sheep and Cattle, premium offered for 31
ROSSI, Mr. Charles, bounty to 325
ROT in SHEEP, premium offered for cure of 49
ROYAL SOCIETY, preſent from 328

S.

SEA WALLING, uſes of Cheſnut Wood in 115
SECRETARY, his paper on Weights and Meaſures 292

SECRETARY, Gold Medal to 327
Present from 329
SEEDS, premium offered for preserving 51
SETON, James, certificate signed 311
SHADWELL, Mr. present from 334
SHARPE, Mr. G. present from 330
SHEEP. See Rot and Fly.
SHIRLEY, Henry, letter signed 31
SILK, premium offered for 76
Machine for carding, premium offered for ibid.
SHACKLETON, J. certificate signed 131
SLADE, Rev. Thomas, certificate signed 243
SMITH, Mr. Peter, premium to 219, 321
Experiments by 219
SMOKE, premium offered for destroying 53
Condensing 54
SOILS, planting boggy, premium offered for 18
SPERMACETI, an ingredient in Oil-colour Cakes 273
STANDARDS for WEIGHTS and MEASURES, paper on, 292
STEAM, premium offered for increasing 59
St. HELENA, list of plants landed at 307
STOTHARD, Mr. his opinion of Mr. Blackman's colours 276
STOCK, Mr. premiums offered by his will 67
STORER, John, certificate signed 124
STOUR WOOD, account of Oaks and Chesnut in 114
ST. VINCENT'S, plants delivered at 309
SURVEYS of COUNTIES, premiums offered for 70

T.

TAR, cautions concerning 205
TAYLOR, Mr. J. present from 330, 335

TIMBER-TREES, premiums offered for 17
Preventing Dry-Rot in, premium offered for 60
TIN, premium offered for refining 63
TRANSIT INSTRUMENT, premium offered for 81
TREACLE, method of separating Sugar from, premium for 52
TURNEPS, premium offered for 27
TURNEP-ROOTED CABBAGE, premiums offered for 29

V.

VEGETABLE FOOD, premium offered for 28

W.

WALLING, expence of 201
WALTERS, Mr. present from 334
WASTE MOORS, premium offered for improving 43
WATER, Machine for raising, premium offered for 85
Allowed weight of a cubic foot of 297
Measure from 299
WATER PRESERVING, Premium offered for 53
Preventing freezing, premium offered for 86
WEATHER BOARDING, composition for preserving 253
Receipt for 255
WHALES, premium offered for taking 81
WHEAT, premiums offered for culture of 23, 24
Claim for culture of 219
Quantity sown 220
Produce 221
WHEEL CARRIAGES, premium offered for improving 87

WHITAKER, Rev. Mr. Gold Medal to 132, 320
WHITE LEAD. See Lead
WHITE, Mr. Thomas, premium to 136, 320
WHORRAL, Catharine, bounty to 326
WICKS for CANDLES or LAMPS, premium offered for 76
WILLOW, UPLAND, or RED, premium offered for 13
WIRE WORM, premium offered for deſtroying 48
WOODFIELD, John, certificate ſigned 229
WORTHINGTON, Mr. T. G. Gold Medal to 323

Y.

YEAST, premium offered for Subſtitute for 57